Witness Name: James Rubin

Statement No.: 1

Exhibits: JR/01 - JR/279

Dated: 21 August 2023

Ref: M2/SAGE/01/JR

UK COVID-19 INQUIRY

WITNESS STATEMENT OF PROFESSOR JAMES RUBIN – MODULE 2

I, James Rubin, 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.

1.2. The matters I set out within this statement are within my own knowledge save where I state otherwise. Where I refer to facts that are not within my own knowledge, I will give the source of my knowledge of those facts.

Background

1.3. I am a Professor of Psychology & Emerging Health Risks at King's College London. My personal area of expertise is in understanding how people perceive novel health risks and how those perceptions affect their behaviour and wellbeing. As part of my interest in this area I have published studies on, amongst other things, public responses to:

(1) The 7 July London bombings

(2) Two incidents of widespread flooding in the UK

(3) The swine flu pandemic

(4) The 2014 Ebola outbreak in West Africa

(5) The poisoning of Alexander Litvinenko with radioactive polonium 210

(6) The poisoning of Sergei Skripal with the nerve agent Novichok;

(7) The Fukushima nuclear meltdown.

1.4. In January 2020, I was invited to attend the first NERVTAG meeting on what became the COVID-19 pandemic. I was then invited by the Government Office for Science to attend the first COVID-19 SAGE meeting on 21 January 2020. On 13 February 2020, SAGE decided to set up a behavioural science subgroup called SPI-B. Because I had experience working on SPI-B&C during the 2009/10 pandemic, I was invited by Sir Patrick Vallance, the Government Chief Scientific Adviser (GCSA) to chair the group.

1.5. The October 2020 Terms of Reference for SPI-B give an accurate summary of the roles of the chair {JR/01 – INQ000196793}:

"The SPI-B chair is responsible for: liaising between SPI-B and SAGE, attending SAGE to represent the views and advice of the Group, and providing written and/or verbal updates as and when required; representing SPI-B at the GO-S Science Coordination Group; chairing meetings and moderating offline discussion; signing-off on all advice of the Group."

1.6. In September 2020 a restructuring of SPI-B occurred, with a smaller co-ordinating group of up to 15 participants meeting to review commissions and to set up working groups from the wider list of participants to tackle them. This is discussed further in paragraph 14.2. At this stage the role of chair changed slightly. Although outputs continued to be reviewed by the co-ordinating group and chairs, because the working groups had more autonomy, issues such as "moderating offline discussion" did not really apply.

2: CORSAIR and the Health Protection Research Unit in Emergency Preparedness and Response

2.1. From 2012 to 2022, I was the principal investigator of a study funded by the National Institute for Health and Care Research (NIHR) called FluTEST. During the COVID-19 pandemic, we changed the name of the project to CORSAIR. This study had its origins

in work that my colleagues and I conducted during the 2009/10 swine flu pandemic. At that time, I was a post-doctoral research fellow. I worked under the supervision of Professor Susan Michie on a study that assessed how the UK public had responded to the pandemic. During that pandemic, the Department of Health (DH) conducted regular telephone surveys with members of the public to assess their perceptions and behaviours about swine flu. The aim of our project was to add value to the survey data by conducting a further analysis to identify any trends that might inform communications. My role was to analyse the data under the supervision of Professor Susan Michie and another colleague, Dr (now Professor) Henry Potts. The final report for this work concluded that uptake rates for protective behaviours and likely acceptance rates for vaccination were low, and that more media and advertising coverage might have increased uptake {JR/02 – INQ000196795}. Given that in any future pandemic surveys would probably be used again to understand how the public were responding, our final report also recommended that "*efforts are made to design such surveys ahead of time*." In the FluTEST study, we addressed that recommendation and developed a new survey for use in a future pandemic that could be used to understand how the public were responding and what impact, if any, official communications were having. The main report concerned the development of the wording for survey items that could be used in the future to understand, for example, whether people believed that specified behaviours were effective in reducing the transmission of infection, or how worried people were about an outbreak {JR/03 – INQ000196796}.

2.2. The FluTEST study was intended to enter hibernation once the survey was prepared and to be activated again in the event of a pandemic. This was facilitated by a novel funding stream launched by NIHR, in which a set of pandemic-related studies were funded, prepared and then hibernated.

2.3. Telephone surveys were the standard method used for the type of research that we had proposed when we applied for funding in 2012. Because telephone surveys are expensive, we did not seek funding to pay for any pandemic surveys ourselves. Instead, we assumed that the Department of Health and Social Care (DHSC) would wish to run and pay for their own surveys and that our team's involvement would be limited to suggesting useful questions for DHSC to consider and conducting a secondary analysis of their data.

2.4. The following text, taken from the final report of FluTEST / CORSAIR provides a good account of our activation during the COVID-19 pandemic {JR/04 – INQ000196798}:

"In January 2020, as SARS-CoV-2 spread rapidly around the world, the communications team within DHSC began a series of surveys to understand how the UK public were responding based on FluTEST (initial work in 2012-4 had presumed surveys would be done by telephone, but changes in society's usage of telecommunications meant that surveys switched to online). The first data were collected on 28 January 2020. Each survey wave collected data in an online questionnaire from around 2,000 respondents over the course of two to three days, with data collection being subcontracted to a market research company. FluTEST was activated by NIHR on 4 February 2020 and the team set to work analysing the waves of data that had already been collected and proposing changes to future waves. The work continued under the new name of CORSAIR (the COVID-19 Rapid Survey of Adherence to Interventions and Responses) until 31 March 2022, analysing 73 waves of data collection (approximately 149,600 responses). We are continuing to produce publications from the data and so far we have produced 45 reports, 15 pre-prints and 12 peer-reviewed publications {…} The DHSC and Cabinet Office communications teams were the primary 'customers' for CORSAIR outputs throughout the activation period. However, because we had close links to several Government advisory groups, we were also able to identify and respond to needs for data analyses from SAGE, SPI-B, NERVTAG, NHSE and NHSX. Publications and pre-prints were regularly highlighted to academic and policy colleagues via the weekly UKHSA Behavioural Science Literature Report (available here: https://ukhsalibrary.koha-ptfs.co.uk/coronavirusinformation/), while presentations based on our data were provided to NHS Test and Trace, UKHSA and in cross-Whitehall seminars."

2.5. CORSAIR was not alone in analysing these data. While the CORSAIR team focussed on providing detailed reports on specific issues, the DHSC Communications team also received reports on their data from the market research company who performed the data collection. The DHSC team also conducted their own analyses of the data. Data from the surveys, including some analyses recommended by the CORSAIR team, appeared in a regular behavioural science situation report ('sitrep') that was circulated by a Cabinet Office team to interested parties within Government.

2.6. CORSAIR resulted in 45 reports provided to the DHSC communications team or subgroups within SAGE, 20 peer reviewed academic articles, and a small number of

blogs and other articles. For brevity, I will not provide all of these as exhibits, but they are all publicly available on the website for my research unit.

2.7. The Health Protection Research Unit (HPRU) in Emergency Preparedness and Response at King's College London has been in operation since 2014. There are fourteen such HPRUs, that have been funded by NIHR in two 5-year rounds. Each was awarded approximately £4million per 5-year period. Each Unit focuses on a different topic. Ours is the only HPRU that focuses on Emergency Preparedness and Response, but HPRUs also exist that focus on Modelling and Health Economics, Respiratory Infections, and Behavioural Science and Evaluation. All HPRUs are formal partnerships between higher education institutions and Public Health England / UK Health Security Agency (PHE / UKHSA). Our Unit is a collaboration between UKHSA, King's College London and the University of East Anglia. Professor Sir Simon Wessely, Regius Professor of Psychiatry at King's College London, was originally the Director of our HPRU and I was an assistant director. In May 2022, after Sir Simon became the Interim Executive Dean of the Institute of Psychiatry, Psychology and Neuroscience at King's College London, I took over from him as Director of the Unit.

2.8. All HPRUs began on 1 April 2020 with a renewed contract and a refreshed business plan that had been submitted to NIHR in 2019 as part of the funding application. For our HPRU, the pandemic made our business plan almost entirely obsolete before we had even begun. Many of our projects were repurposed to provide findings that we hoped would support urgent policy decisions or identify lessons for the future, and several of our academic team were seconded to UKHSA, reallocated to help kick-start other essential projects (including, for example, the post-doctoral research fellow who worked on CORSAIR) or participated in SAGE or one of its subgroups.

2.9. The Unit includes around 35 team members. From 2020 to 2022, we produced over 150 papers and articles relating to the pandemic, often in collaboration with colleagues from other research units or institutions. I will not attempt to summarise this large body of work, nor will I provide copies of every paper as exhibits, but I will make reference to key papers elsewhere in this statement where they are relevant. Papers produced by the HPRU team related to, among other things:

(1) Uptake of various protective behaviours (e.g. hand hygiene, social distancing);

(2) Vaccination intentions;

(3) Adherence to test, trace and isolate policies;

(4) Exposure to conspiracy theories;

(5) Public knowledge, attitudes and behaviours;

(6) The spread of infection in care homes;

(7) The effectiveness of face masks;

(8) The epidemiology of COVID-19 in January to June 2020;

(9) The use of syndromic surveillance;

(10) Mental health, particularly among NHS staff.

2.10. Specific populations considered within our research included:

(1) The general UK population;

(2) School students;

(3) University students;

(4) NHS staff;

(5) Care home employees;

(6) People with Parkinson's disease;

(7) International travellers;

(8) Pregnant women;

(9) Parents of young children;

(10) The Chinese community in the UK;

(11) Minoritised ethnic communities.

2.11. As well as conducting research that the Unit judged might be useful, we also provided specific support to SAGE, its subgroups and other functions within Government by conducting specifically commissioned pieces of rapid research. This included:

(1) A piece of work commissioned by NIHR to explore how incoming passengers at UK airports understood public health advice. This work was conducted in collaboration with the NIHR Health Protection Research Unit in Behavioural Science and Evaluation at the University of Bristol, who led the work. This concluded that public health information was perceived as clear and acceptable by travellers, but also that passengers thought that information alone was an insufficient response to the pandemic and that the positioning of information

materials within terminal buildings made them easy to miss {JR/05 – INQ000196886, JR/06 – INQ000196887}.

(2) A piece of work funded by the Chief Medical Officer to explore attitudes towards personal protective equipment and behaviours among frontline medical staff {JR/07 – INQ000196888}. This concluded that "*uptake of personal protective behaviours among UK {healthcare workers} at the start of the pandemic was variable. Factors associated with adherence provide insight into ways to support HCWs to adopt personal protective behaviours, such as ensuring that adequate PPE is available and designing workplaces to facilitate physical distancing.*"

(3) A programme of work relating to a randomised controlled trial testing whether allowing people who had been in contact with someone who had COVID-19 to take a daily test for COVID-19 had equivalent impact on rates of transmission as asking all contacts to self-isolate immediately {JR/08 – INQ000196889, JR/09 – INQ000196890, JR/10 – INQ000196891, JR/11 – INQ000196892, JR/12 – INQ000196894}. This concluded that daily testing was equivalent, if not better, to immediate self-isolation in terms of the risk of transmission and that it had the added advantage of allowing people to engage in important social and economic activities.

2.12. It is difficult for me to say with any certainty how findings from the CORSAIR study or the wider range of studies conducted by the EPR HPRU were used to inform political decision-making. Such decisions were made behind closed doors. Once we had provided evidence (for example, after it was cited in a SAGE paper, provided in a report to DHSC or published in the academic literature), what happened next was usually a mystery to us. Possibly a given paper was read in detail by people within Government, debated, critiqued and the implications carefully weighed against other sources of evidence and policy priorities. Possibly it was discarded out of hand as irrelevant. Or possibly it was never read at all. Most of the time, I do not know what, if any, weight was given to something that I co-authored. There are some exceptions to this. Every few years, universities engage in a process called the Research Excellence Framework. As part of this, we are evaluated by Research England partly on the impact that our research has had outside of academia. University funding depends on presenting a carefully-evidenced case of real-world impact and academics are often asked by their universities to spend some time tracking down what if any impact their

work has had. As part of the 2021 Research Excellence Framework, I tried to find the best examples of impact for our work during the pandemic. Two key sources of evidence that I was able to draw on were a letter from the Government Office for Science provided by Sir Patrick Vallance {JR/13 – INQ000196895} and a letter from UKHSA provided by Professor Richard Amlôt {JR/14 – INQ000196896}.

2.13. Sir Patrick Vallance's letter gives the following specific examples of impact:

"The {CORSAIR} team delivered weekly updates to DHSC, SPI-B and others, with over 28 data reports including: adherence to self-isolation and hand hygiene; levels of stigma and distress; understanding the importance of ventilation and barriers to uptake of the NHS Covid App.

…

King's analysis provided evidence behind the SPI-B and SAGE recommendation that a testing and contact tracing strategy must consider adherence to isolation. On September 17 SAGE endorsed a commissioned SPI-B report on improving rates of adherence to self-isolation, delivered immediately to Government Officials; this included a specific focus on the need for financial support, citing King's analyses. The Government announced new measures on September 19 including the provision of £500 grants to those on low incomes asked to self-isolate and this report continues to inform central Government discussions informing the ongoing UK response.

…

Following the Prime Minister's March 16 2020 announcement that people should avoid non-essential travel and contact, a crucial question was whether this advice sufficiently changed public behaviour. King's evidence of 'room for improvement', along with similar findings from the ONS, were considered by SAGE on March 23rd and adopted as one of five essential findings subsequently reported to central government, and supported briefing for COBR the same day. This contribution from King's, along with expert input from Dr Rubin in the weeks preceding, contributed to the evidence base behind the decision that the UK would enter a full, compulsory lockdown."

2.14. Professor Richard Amlôt's letter says that the activities directly informed by our work were as follows:

"From early in the pandemic, Prof Rubin's rapid systematic reviews on the impact of quarantine on mental health was included in our briefings for staff running the Arrowe Park and Kent's Hill Park isolation facilities.

…

Prof Rubin has chaired SPI-B and the outputs of the group have directly informed a range of policy areas, and specifically have informed how we write gov.uk coronavirus guidance, which receives many millions of unique hits during the pandemic.

…

Prof Rubin's work analysing the DHSC tracker surveys (the CORSAIR project) to establish rates of testing uptake, engagement with NHS T&T and self-isolation adherence has been widely briefed across the public health system, and is being used to inform the development of pilots designed to improve testing uptake, and self-isolation adherence in a number of localities across England.

…

"When published, we have routinely briefed the internal JBC, T&T and PHE teams in the National Covid Response Centre (NCRC) morning Situational Awareness Meetings on the outcomes and implications of Prof Rubin's work across a range of policy and operational areas, including on symptom attribution/recognition, self-isolation adherence, vaccination uptake and public perceptions and behavioural intentions relating to the COVID-19 pandemic."

3: Contact with core high level decision makers outside of SAGE

3.1. I have been asked to provide details of relevant meetings and contact that I had with core decision makers at the highest level, outside of formal SAGE contexts, with 'SAGE' defined as including all subgroups, committees and communications relating to them, as well as the implementation of decisions resulting from such meetings. In doing this, I have interpreted "highest level" to include ministers, their special advisors, senior civil servants, Sir Patrick Vallance, Sir Chris Whitty, the deputy chief medical officers and other key players within Government departments.

3.2. In producing this section, I have consulted my emails and diary from January 2020 onwards. As previously noted in my statement for Module 1, I have limited correspondence prior to April 2020.

Meeting with Dominic Cummings and subsequent contact with Ben Warner

3.3. An invitation to meet with Mr Cummings appeared in February 2020. I think it originated from the Prime Minister' Office (No10). I believe that Mr Cummings had earlier asked Sir Patrick Vallance to recommend some behavioural scientists to talk to, and Sir Patrick Vallance recommended myself and Professor Brooke Rogers. Professor Brooke Rogers and I attended No10 on 11 February from 3 to 4pm. Also in attendance were Ben Warner and Imran Shafi from No10, and potentially one or two other officials, I cannot remember for sure. I did not retain the emails relating to this meeting. As far as I recall there was no set agenda or minutes. I took with me printed copies of a note that I prepared: "Behavioural science and coronavirus: A very brief overview" {JR/15 – INQ000196897}. I wrote this partly in an attempt to pre-empt some issues that have arisen in response to previous crises and partly to convey what I felt were some key points about the situation as I understood it at the time. The document tackled the following issues:

(1) **Worry**. I provided a graph of data collected in DHSC polling during the 2009/10 swine flu pandemic to illustrate the point that worry was low before the first death occurred in the UK, then rose in line with media reporting, and then showed less variation in the second wave of the swine flu pandemic. This was copied from the survey analysis described in paragraph 2.1 {JR/02 – INQ000196795}.

(2) **Panic**. This is a common concern among policy makers during a crisis, but rarely happens. The paper made the point that it is usually more helpful to try to understand why people are behaving in unexpected or counter-productive ways (if this happens), rather than simply labelling it as unthinking "panic". People often have a range of reasons for their behaviours and taking the time to understand them allows us to communicate better.

(3) **Reassurance**. In a crisis, people need information. In some previous incidents, those in charge have decided to focus on providing nonspecific reassurance instead. Nonspecific or unevidenced reassurance can lead to a loss of trust, mixed messages, and an impact on whether people are motivated to carry out

behaviours that might protect health. During the polonium 210 crisis in 2006, for example, attempts to reassure people who might have been exposed to the radioactive agent led to complaints from those affected that they were receiving "platitudes" rather than the information that they wanted {JR/16 – INQ000196898}.

(4) **Scepticism**. Work during the 2009/10 swine flu pandemic identified a relatively high level of scepticism that was high from the start of the pandemic and did not seem to fluctuate very much as time went on {JR/17 – INQ000196899}.

(5) **Trust**. In the paper, I pointed out that it is important for the public to trust official agencies, and that trust can be built by being demonstrably open and honest, acting in the public's best interest and being consistent with messages.

(6) **Motivation**. The paper referred to a model of behaviour called Protection Motivation Theory. This suggests that people are more likely to adopt a behaviour to protect their health if (to use the example of COVID-19) they believe that: they are likely to catch the illness; the illness will be severe for them; the recommended protective behaviour will work; the behaviour does not have too many costs (broadly defined); and they could enact the behaviour, if they wanted to. It suggests that identifying which of these factors are most linked to a given behaviour and have most room for improvement may provide insight into how to frame campaigns. The factors described had previously been highlighted in a 2010 paper on the demographic and attitudinal determinants of protective behaviours during a pandemic that had been produced as part of the work of the SPI-B&C group {JR/18 – INQ000196900}.

(7) **Self-isolation and adherence**. Drawing on a recent paper by my team, I highlighted that adherence rates to self-isolation fluctuated in the literature, and that factors associated with adherence included: knowledge about the disease and about quarantine; the perceived benefits of quarantine; the perceived risk of the disease; and practical issues including having enough supplies and not being financially disadvantaged {JR/19 – INQ000196901}.

(8) **Self-isolation and wellbeing**. The paper summarised a recent review by my group {JR/20 – INQ000196902}. It pointed out that self-isolation is stressful and that there was some limited evidence of longer-term psychological impact. It highlighted ways to reduce these impacts (e.g. limiting duration to what was

necessary, providing good information, providing sufficient supplies, appealing to people's altruism).

(9) **Presenteeism**. I drew on an earlier paper by my team and pointed out that people often attend work when ill, a phenomenon known as presenteeism {JR/21 – INQ000196903}. I suggested that identifying and tackling the causes may help keep ill people at home, and that (based on poor evidence) this might include addressing factors such as workplace culture, fears of disciplinary action, worries about burdening colleagues and financial worries.

(10) **Surges in attendance at medical facilities**. This section highlighted that in previous major incidents, most people who have sought care for a specific illness have not had it. I warned that the old-fashioned term "the worried well" was pejorative and should not be used. I suggested that remote services and triaging could help cope with any surge.

(11) **Avoidance of medical services**. I warned that, if medical services were viewed as potentially hazardous areas where one could contract an illness, then people might avoid them. I cited evidence from the SARS outbreak of a decline in the use of medical services as people avoided accident and emergency, ambulatory and inpatient care, and discharged themselves from hospital against medical advice.

3.4. During the meeting, I recall that we talked briefly through these points. Mr Cummings appeared interested, particularly in terms of what the best form of messaging might be for public health issues. He asked Dr Warner to start attending SAGE meetings as an observer. I raised the need for data on what members of the public were doing. I raised the issue of FluTEST (as it then was called) that had been activated a week earlier and mentioned that we were then discussing it with DHSC. I remember asking Mr Cummings for his opinion on the use of telephone vs online polling methods in terms of the quality of the data. There was a general agreement that polling was going to be needed, and there was discussion about the usefulness of a data dashboard that would pull together survey and other data sources and allow easy access to these data for users across Government.

3.5. We agreed that I would have a follow-up meeting with Dr Warner to discuss this further and provide an update to Mr Shafi on progress about, I think, the DHSC surveys towards the end of the week. I do not have a copy of any update that I sent.

3.6. Dr Warner arranged a follow-up meeting for 25 February 2020, which had to be rearranged to 3 March 2020. At the meeting were: Dr Warner; Dr Henry Potts who is the statistician working on the FluTEST / CORSAIR project; Lewis Woodward, Head of Research, Insight and Evaluation, Communications, in DHSC; and I believe (but am not sure) Kate Thomas from DHSC {JR/22 – INQ000196906}. I recall that meeting as being relatively technical and focussed on how to develop the polling. Following on from the meeting, the Cabinet Office launched their own survey that was commissioned via YouGov, and which gathered data on a daily basis on an evolving range of topics, with the results circulated within Government. This was separate to the DHSC surveys that were analysed by FluTEST / CORSAIR. Although I had sight of these data, my colleagues and I did not analyse them. Discussion about developing a dashboard continued by email {JR/23 – INQ000196907} and was referenced in SPI-B papers {JR/10 – INQ000196891}. As part of this Dr Warner asked me to suggest a public health specialist who might help think about what data was needed with respect to hard to reach communities and I proposed Professor Andrew Hayward, a colleague from NERVTAG {JR/23}.

3.7. Follow-up emails with Dr Warner included:

(1) Discussion in April / May 2020 of a request from SPI-B to include survey items into polling being commissioned via the Cabinet Office, following an offer relating to their polling {JR/24 – INQ000196908, JR/25 – INQ000196909}.

(2) A check-in from Dr Warner on 27 May 2020 as to whether we needed anything from a survey point of view regarding test and trace, which I responded to attaching a copy of a forthcoming paper that I had co-authored on this {JR/26 – INQ000196911, JR/27 – INQ000196912}.

(3) Feedback relating to one of the papers that SPI-B had produced {JR/28 – INQ000196914, JR/29 – INQ000196915}

(4) An email exchange on 23 June 2020 in which Dr Warner contacted me to note that recent polling had shown a lack of adherence to self-isolation guidance. I responded with two attachments and noted that two other separate polling companies had shown a similar thing and attached the relevant reports. I noted that "*I am very worried about this*" and that, if three separate sets of data were all showing the same basic finding of low adherence to self-isolation "*it is {a} pretty loud alarm bell.*" {JR/26 – INQ000196911, JR/30 – INQ000196916, JR/31 – INQ000196919, JR/32 – INQ000196917, JR/33 – INQ000196922} I received

a copy of the relevant report from the survey company and forwarded it to my colleagues at DHSC who I was discussing the CORSAIR data with {JR/34 – INQ000196923}.

(5) An emailed summary of polling relating to the pandemic that was regularly circulated within Government, which I added myself to the distribution list for {JR/35 – INQ000196924}.

(6) An email chain on 13 and 14 October 2020 about self-isolation behaviours, after Dr Warner asked "*have you seen any studies or analysis that separates isolation behaviour of those with a positive test, from those who have been asked to isolate for other reasons (T&T, holiday, etc).*?" I replied that "*we really need good, regular data on adherence to self-isolation {…} I know NHS TT are talking to ONS about better data on this. I'd fully support more and better – we can't improve TTI without having a good metric on this.*" {JR/36 – INQ000196925, JR/37 – INQ000196926, JR/38 – INQ000196927, JR/39 – INQ000196928}.

(7) An email from me to Dr Warner, Susan Hopkins, Chris Whitty, Richard Amlôt (UKHSA), David Halpern, Hugo Harper (Behavioural Insights Team) and Dominic Cummings to note that an issue had been identified in the data for one paper from my team, the pre-print of which had been widely circulated. I noted that a caveat about the data had been placed on the pre-print server and SAGE website, and that I wanted to make sure they were aware of it too {JR/40 – INQ000196929}.

(8) An email to SPI-B from Dr Warner on 7 January 2021 asking whether rational messaging to people in self-isolation was more effective than emotive messaging {JR/41 – INQ000196930}, to which I replied that *"I would have concerns about ramping up fear. There is definitely scope to revisit the messaging that such people receive, but I would be concerned about messages focussing on death in people who are ill."* {JR/42 – INQ000196932}. I attached two papers as evidence that people were not implementing within home protective behaviours such as improving ventilation as well as they might and that 'rational' messages were effective in reducing disease transmission in this group {JR/43 – INQ000196933, JR/44 – INQ000196934}. This latter attachment described evidence from a project called Germ Defence. My co-chair Professor Lucy Yardley provided the same Germ Defence attachment and

described that "*although emotive messaging can help to increase motivation, there is a wealth of evidence that fear-evoking messages only work if they are not too anxiety provoking (which prompts denial) and if they are accompanied immediately by advice on how to reduce the risk that people find credible and feasible.*" {JR/45 – INQ000196937}. The SPI-B secretariat forwarded our comments back to Dr Warner {JR/46 – INQ000196939}. On 7 January 2021, I was then cc'd into messages from Dr Warner to my SPI-B Co-Chair Professor Lucy Yardley about how to roll the Germ Defence intervention out more widely to the public {JR/47 – INQ000196940, JR/48 – INQ000196941, JR/49 – INQ000196942, JR/50 – INQ000196943, JR/51 – INQ000196944, JR/52 – INQ000196946}.

3.8. In October 2020 I was invited to a meeting with Dominic Cummings, Professor David Halpern, Professor Susan Hopkins, Lee Cain and others by Professor David Halpern who said that "*the objective is to kick the tyres on compliance data with isolation – from poll data, SPI-B papers etc*" {JR/53 – INQ000196947}. The meeting clashed with a SAGE meeting and I did not attend but I did provide a link to a SPI-B paper that I thought would be relevant. {JR/54 – INQ000196948, JR/55 – INQ000196949}. Additional emails around this have been exhibited {JR/56 – INQ000196953}.

Contact with the Chief Medical Officer and his private office

3.9. On 30 June 2020 I was contacted by the Chief Medical Officer (CMO), Sir Chris Witty's Private Secretary to ask about ways to tackle online misinformation about the coronavirus vaccination {JR/57 – INQ000196954}. I replied, attaching a brief handbook of evidence-based approaches to misinformation. {JR/58 – INQ000196955}

3.10. In September 2020, I attended an online meeting in which the work of the HPRUs was discussed. During it, Sir Chris Whitty mentioned that he felt that behavioural science input into the pandemic to that point was not as impactful as it might have been. I corresponded with him and set up a call to discuss this further {JR/59 – INQ000196958}. We spoke on 8 October 2020. During the conversation, Sir Chris Whitty mentioned that he had found the style of behavioural science advice that he had received during the Ebola outbreak very useful. That was quite specific advice on, for example, burial practices in West Africa. We agreed to explore ways to make SPI-B advice more specific, while bearing in mind the need not to get involved in operational aspects of the response. I then spoke to someone from his private office

about linking her in with an ongoing paper in SPI-B so that she might help to make sure the advice was actionable. {JR/60 – INQ000196959, JR/61 – INQ000196960}. On 19 October 2020, Sir Chris Whitty sent me an email for information relating to university outbreaks to support ongoing SPI-B work in this area. {JR/62 – INQ000196961} We also arranged for Professor Richard Amlôt from PHE, who was a participant in SPI-B meetings, to attend Silver meetings to get a sense of what population groups might be useful to focus on. {JR/63 – INQ000196962}

3.11. On 7 May 2020, I emailed Sir Chris Whitty and Sir Patrick Vallance to flag a point that had been raised in SPI-B {JR/64 – INQ000196963}. This was that the rhetoric in the media about "lockdown freedom beckons" ahead of VE day might lead to a reduction in social distancing and a spike in infections. I suggested that tempering public expectations "*might be a useful thing to try to get in if you are speaking to the PM or at the podium*".

3.12. In May and June 2020, I corresponded with Sir Chris Whitty and his office about the publication process for CORSAIR. Permission to publish the academic papers produced by the team had been declined by the DHSC team that owned the data and I requested Sir Chris Whitty intervene. The block was resolved and we were able to publish. {JR/65 – INQ000196964}

Contact with Sir Patrick Vallance

3.13. I spoke to Sir Patrick Vallance by phone on several occasions to discuss behavioural science input into SAGE and issues around SPI-B. I have records of brief calls happening on 22 April 2020 (to discuss behavioural science input to SAGE) {JR/66 – INQ000196965}, 10 May 2020 (in relation to disquiet within SPI-B over a redacted paper and changes to the Government slogan), 29 May 2020 (to discuss press coverage on SPI-B) and 19 June 2020 (to discuss SPI-B participants joining Independent SAGE) {JR/67 – INQ000196969}, in addition to text messages to discuss issues relating to support for self-isolation (relating to SPI-B advice), the SPI-B advice on communications and support for a select committee appearance.

3.14. I also exchanged emails with Sir Patrick Vallance on the subject of a BMJ paper from the CORSAIR team about adherence to self-isolation and the need for support to turn good intentions into behaviour {JR/68 – INQ000196970}, on the issue of SPI-B participants joining Independent SAGE {JR/67 – INQ000196969}, on the media furore surrounding redactions to a SPI-B paper and a change in Government slogan {JR/69–

INQ000196971, JR/70 – INQ000196972, JR/71 – INQ000196973} and about the issue of communicating a degree of caution ahead of VE day celebrations {JR/64 – INQ000196963}.

Contact with Dame Jenny Harries

3.15. I attended a breakfast workshop at the Royal Society of Medicine on 26 February 2020, also attended by Professor David Halpern and Professor Dame Jenny Harries. This was arranged by the Director of my research unit, Professor Sir Simon Wessely, who was also the President of the Royal Society of Medicine. The topic was 'quarantine' and I gave a summary of our paper on the psychological impact of quarantine that had been published in the Lancet that day {JR/20 – INQ000196902}.

Contact with Sir Jonathan Van Tam

3.16. On 30 November 2021, I sent an email to Sir Jonathan Van Tam reminding him that use of phrases such as 'no need to panic' are best avoided, as it sets in train a self-fulfilling perception that it is best to stock up on essentials, before everyone else starts to 'panic' {JR/72 – INQ000196974}. Sir Jonathan Van Tam had just used this type of phrasing at a press conference. He replied that "I will always take that from you. Thanks." and went on to note that the statement had led to lots of people coming forward for their booster jabs.

3.17. On 30 September 2020 I was invited to a meeting with Sir Jonathan Van Tam by the CMO's private office relating to the management of vaccine clinical trials in the context of the role out of vaccination {JR/73– INQ000196975}. This included consideration of issues such as how to manage people on the Joint Committee on Vaccination and Immunisation (JCVI) priority list who had enrolled in a vaccine trial and who might have received placebo vaccination. The meeting took place on 1 October 2020 and from the outlook invite I can see that it included Sir Jonathan Van Tam, Professor Sir Jonathan Montgomery from UCL, Dr Mary Ramsay (PHE) and representatives from DHSC, BEIS and NIHR {JR/74 – INQ000196976}. I cannot recall details of the meeting and have not found any minutes or agenda.

3.18. On 24 April 2020 I emailed Sir Jonathan Van Tam regarding the Covid App to point out that any perceived differences in the advice given by the App and by PHE would

be confusing for the public and needed to be avoided {JR/75 – INQ000196978}. I cannot find a response from Sir Jonathan in my files.

Contact with Rob Harrison and the COVID-19 Taskforce

3.19. On 13 November 2020, Dame Angela McLean copied me into an email to introduce me to Rob Harrison, who was the Director General of Analysis in the COVID 19 taskforce within the Cabinet Office. {JR/76 – INQ000196979} An introductory meeting was set up for 19 November 2020. {JR/77 – INQ000196983} I believe Professor Dame Theresa Marteau from SPI-B also attended {JR/78 – INQ000196984}. Mr Harrison shared a document on the curfew measures and asked for our views on it. {JR/79 – INQ000196985, JR/80 – INQ000196986} We replied that it would be useful to get a view from the police and those working in the hospitality sector, that caution was needed in comparing evidence from England and Europe given the different cultures around drinking, that there was a need to communicate any changes in policy clearly, and that basing restrictions on evidence that is clearly explained to the public makes changes easier to explain when they are needed. We also provided a briefing note about supporting self-isolation {JR/81– INQ000196988, JR/82 – INQ000196989, JR/83 – INQ000196991} which recommended developing a pilot package of support in areas of high deprivation and estimating its cost-effectiveness.

3.20. On 1 December 2020, Mr Harrison forwarded an email relating to a forthcoming COVID-O discussion about increasing compliance to self-isolation and suggested that I connect with DHSC colleagues about it {JR/84 – INQ000196992, JR/85 – INQ000196993}. I followed up on this, facilitated by the SPI-B secretariat {for example, JR/86 – INQ000196995}.

3.21. On 11 December 2020, Mr Harrison included me in an email sent to multiple people asking what was needed to *"understand the complex effects of government action, communications, perceptions of risk, etc on public behaviour."* {JR/87 – INQ000196996}. I provided my own initial thoughts that what was needed was observational, rather than self-report data and then followed-up with the consolidated views of others within SPI-B which flagged the importance of small, good quality studies over large, poor quality ones, the importance of a specific schools study, the need to monitor the unintended consequences of policy and the need to consider issues on ethnicity {JR/87– INQ000196996, JR/88 – INQ000196997}.

3.22. On 4 February 2021, Mr Harrison requested a paper produced by the CORSAIR team on attendance in the workplace, which I provided {JR/89 – INQ000196998, JR/90 – INQ000196999, JR/91 – INQ000197001, JR/92 – INQ000197002}. He then passed this to one of his colleagues who was producing a piece of work on workplace mobility.

3.23. On 11 February 2021, Professor Yvonne Doyle, Medical Director and Director of Health Protection at PHE, contacted me about the use of COVID-19 certificates, a topic that had been discussed at SAGE and which was receiving some attention in the press {JR/93 – INQ000197004}. Professor Yvonne Doyle and I corresponded with Mr Harrison and his team and discussed the issue with him and his team on 25 February 2021. This led to a paper by SPI-B on evidence gaps in this area {JR/94 – INQ000197237}.

3.24. On 18 October 2021 I was invited to attend a "Senior workshop" held by the COVID-19 taskforce {JR/95 – INQ000197005}. I can see the invitation list included Rob Harrison, Professor David Halpern, Angela Larkin (Chair, C-19 Taskforce) and multiple others from DHSC, Cabinet Office and elsewhere within Government. The 'exam question' set for the session was "what more can be done to influence behaviours alongside the national communications campaign?" {JR/96 – INQ000197006, JR/97 – INQ000197007, JR/98 – INQ000197008}. Ahead of the session, I sent in a paper I had written with the CORSAIR team which I also submitted to SAGE. This considered how behaviours among people with symptoms of COVID-19 might change during the winter of 2021. {JR/99 – INQ000197012} The session lasted one hour and took place on 22 October 2021. During the session I gave a two-minute overview of my perspective. I cannot recall exactly what I said, but from the minutes I can see that the key reflections I raised were that {JR/100 – INQ000197013, JR/101 – INQ000197014}:

(1) What the Government does (rather than what it says) has the biggest communication effect.

(2) Adherence to isolation is good among those who get a test. But only 30% of people with symptoms sought a test. Improving symptom recognition and financial support might improve rates of self-isolation.

(3) People often felt that mild symptoms were unlikely to be COVID-19. As the winter brought with it a rise in common colds, people would be even less inclined to assume their mild symptoms might be COVID-19.

(4) Policies to encourage people to stay at home with symptoms of any respiratory illness might have helped mitigate the effect in point 3 above, but the policy around that in the winter plan appeared weak.

3.25. A meeting with Simon Ridley (Director General, COVID-19 Taskforce) also occurred on 5 November 2020 which included Jeanelle DeGruchy (a director of public health) and other colleagues from SPI-B and Government, to discuss how to use non-enforcement approaches to encourage behaviour change. This engagement was as part of SPI-B and was used to discuss a SAGE paper on 'positive strategies for sustaining adherence to infection control behaviours' {JR/102 – INQ000197210}.

Contact with the Bank of England

3.26. On 18 June 2020, Professor John Edmunds forwarded an email to me from Fergal Shortall, and several junior officials from the Bank of England. They introduced themselves as working on macroeconomic forecasts and monetary policy. They had questions about the impact of the pandemic and restrictions on consumer behaviour. I spoke to one of the officials on 21 July 2020 and in a follow-up email I noted that *"We discussed how risk perception and people's perceptions of the safety of specific venues might change their behaviour. The cabinet office survey on risk perceptions that I mentioned run through YouGov is commissioned by the Cabinet Office and the link person to talk to is* NR NR *@cabinetoffice.gov.uk. We also discussed the importance of social norms and the possibility (which not all my colleagues agree with, so maybe treat as "needs more evidence!") that initiating a behaviour and not experiencing a negative outcome as a result may help people re-engage in behaviours more fully (basically, getting people started is half the battle). I will ask my colleagues who wrote a paper covering this if they would mind me sharing it with you."* {JR/103 – INQ000197016}. The paper that I subsequently sent had been produced by two colleagues from outside of SAGE. SPI-B had asked them to produce it to inform our own thinking about recovery {JR/104 – INQ000197017}.

3.27. On 23 September 2020 I was approached, together with Professor John Edmunds, by Fergal Shortall (Head of Monetary Policy Outlook Division at the Bank of England) {JR/105 – INQ000197037}. He invited us to do a talk / Q&A session for the Governor and Monetary Policy Committee at the Bank of England who were "*thinking again about the underlying assumptions we're using to build our forecasts of where the economy is likely to go*." He asked us to do brief presentations followed by time for

discussion and provided some possible topics that we might want to cover (e.g. "have we learnt anything about how people might react differently this time to the imposition of a lockdown" and "Can we observe any change in the public's behaviour in response to the risks of the pandemic (i) over the summer months and (ii) as cases have risen again in September and October?"). We were provided with list of suggested topics to that the Bank was interested in discussing {JR/106 – INQ000197068} {JR/107 – INQ000197018}. The talks occurred on 9 October 2020. On the morning, Professor John Edmunds spoke first, and I presented afterwards. I do not know who exactly was on the call from the Bank of England's side. I have provided the slides that I used as an exhibit {JR/108 – INQ000197019}. These drew on survey data from polling by DHSC, the Office for National Statistics and YouGov, and presented an influential model of behaviour change which highlights the importance of Capability, Opportunity and Motivation in driving behaviour (the 'COM-B' model). Professor John Edmunds and I were asked for permission for these slides to be shared within the Bank and agreed.

3.28. On 3 December 2020 I was approached again by an analyst from the Bank of England who was interested in the possible impact of the vaccination programme on economic activity. I referred this to the SPI-B secretariat as the impact of vaccination on behaviour was already a general topic of conversation within SPI-B. They offered to discuss the best way to commission SPI-B to provide support and contacted the Bank of England about this. I do not think I heard anything back {JR/109 – INQ000197029}.

3.29. Relevant correspondence relating to these contacts has been exhibited {JR/105 – INQ000197037, JR/106 – INQ000197068, JR/107 – INQ000197018, JR/109 – INQ000197029, JR/110 – INQ000197031, JR/111 – INQ000197038, JR/112 – INQ000197054, JR/113 – INQ000197065, JR/114 – INQ000197067, JR/115 – INQ000197070}.

Contact with Alex Aiken, Director of Government Communication Service

3.30. I can see that on 10 May 2020, I was contacted by Professor David Halpern. He texted me to say that he had taken a call from Mr Aiken about "*the SPI-B letter*" and thought it was a good idea to connect the two of us {JR/116 – INQ000197073}. I believe the concern within Government was that SPI-B was intending to submit a public letter criticising the recent change in the Government slogan to "stay alert, control the virus, save lives." There had been correspondence about the disquiet within SPI-B about this

earlier that day {JR/117 – INQ000197075, JR/118 – INQ000197076} (discussed further in paragraph 22.5). I confirmed that this letter would not be happening. It was not SPI-B's role to quality assure Government messaging, although we could and did provide evidence-based advice on the principles of how to improve future messaging {JR/119 – INQ000197140}. Professor David Halpern copied me into a message to Mr Aiken which repeated this, and noted that "*To state the obvious, our best protection against such attacks is to show that we have used good science and methods. We've not been involved in this one, but maybe worth sharing the work that comms used to developed the lines?*" I followed up on this by noting that I had "*reiterated to the group that it is not in our remit to get involved in messaging, unless we are asked to. We are here to offer SAGE behavioural science input, and that's it. That said, some of the members are pretty good on communication. If you did want to give them a try, in their capacity as independent academics, it would be easy to make the introductions and see what you think.*" Mr Aiken offered to give some thought to it {JR/120 – INQ000197077}.

3.31. On the same day, I was emailed by Dr Laura de Molière from the Government Communication Service offering to chat, which I took her up on {JR/121 – INQ000197078}. From memory, I think Dr de Molière noted that the development of the slogan had been tested in focus groups, and that the team responsible were already aware of the public criticisms that had been levelled at it. I see Dr de Molière also confirmed this via an email, making the additional point that flagging concerns about the slogan itself was unlikely to achieve very much ("*they won't change the message now*"), but that more forward-looking advice might have impact {JR/117 – INQ000197075}. Dr de Molière subsequently provided feedback on a SPI-B paper that provided evidence on ways to develop slogans {JR/119 – INQ000197140} and I corresponded with her as to how the paper was likely to land within the Government Communication Service. {JR/122 – INQ000197079} I will discuss this paper and correspondence around it more fully in paragraph 22.5.

3.32. Later, an action came out of a SAGE meeting of 23 June 2020 {JR/123 – **INQ000120530**} for SPI-B to meet with Mr Aiken to discuss behavioural science principles about communication {JR/124 – INQ000197081}. I believe this arose as a result of the original email conversation between us on 10 May 2020. This action resulted in a meeting being set-up between the Government Communication Service and a small SPI-B subgroup {JR/125 – INQ000197082, JR/126 – INQ000197083, JR/127 – INQ000197084, JR/128 – INQ000197086}. The meeting needed to be

rearranged to 3 July 2020 at 2pm, and there was some confusion as to its purpose and who was attending. I can see from the invite list that there are 15 names including myself, Mr Aiken, members of the Government Communication Service, the SPI-B secretariat, but for some reason not including the other members of SPI-B who I think also attended (Professor Chris Bonnell and Professor Stephen Reicher). I also had a separate meeting with Mr Aiken and Mr Matthew Walmsley that was arranged by Mr Aiken's office for 3 July 2020 at 0930 to 1000 and where the agenda covered: "*1) Practical next steps for Joint working; a) Liaison Officers, Weekly sit-rep, practical application; 2) Common Sense Application; 3) Culture around publishing.*" {JR/128 – INQ000197086, JR/129 – INQ000197087}. I cannot remember the details for these points. The SPI-B secretariat prepared a briefing note to accompany the 2pm meeting {JR/125 – INQ000197082, JR/130 – INQ000197088}.

Contact with Professor David Halpern, Behavioural Insights Team

3.33. Professor David Halpern was initially a participant in SPI-B and SAGE and I therefore spoke to him about papers for those groups on several occasions. We also spoke outside of the context of SAGE on some occasions.

3.34. On 23 April 2020, Professor David Halpern emailed me to discuss media requests he was receiving around the topic of "behavioural fatigue." He was concerned that SPI-B participants were suggesting that the Behavioural Insights Team were responsible for this concept. He noted that this was not correct and wondered if I could "*politely remind SPI-B members to be cautious in their remarks.*" {JR/131 – INQ000197089} We spoke on the phone about this, and Professor David Halpern summarised our conversation in an email to his team the next day where he said "*One idea was that we might, with James, seek to put together a paper at some point soon bringing together an account of the behavioural compliance issues around covid. We have a lot of data and thinking, and James has worked in this are too (as well as his role chairing SPI-B). This would be worth oing* {sic} *in its own right, but would also zoom out from the narrow question of what Chris W said, to look at the real range of compliance issues and reponses, not least so that the public /media could engage in the disucsion too.*" {JR/132 – INQ000197090}. This paper did not happen. On 6 May 2020 I sent an apologetic response asking "*Can we park this idea for now while I wade through my backlog?*"

3.35. Professor David Halpern also later passed a media request to me about a paper SPI-B had written, which I passed to the author of the paper {JR/133 – INQ000197091, JR/134 – INQ000197092}.

4: Behavioural Science

4.1. 'Behavioural science' is a catch-all term that describes the use of theories, models and evidence to understand human behaviour. Many different disciplines are relevant to this understanding, including (among others): psychology, anthropology, sociology, human geography, criminology and economics. Each discipline brings its own perspectives, theories and practices to bear on the issue.

4.2. Within my own area of psychology as applied to health protection, the core theories that were used in SPI-B to understand behaviour consisted of the Capability, Opportunity and Motivation model of Behaviour (COM-B) and, to a lesser extent, Protection Motivation Theory (PMT) and other, related theories of behaviour.

4.3. PMT proposes that, when people are considering a protective behaviour (for example, accepting vaccination), whether or not they are motivated to perform that behaviour is determined by two processes: threat appraisal and coping appraisal. Threat appraisal focuses on whether people believe that a given threat is likely to affect them and, if it does affect them, how severe the consequences will be. People's considerations here can be broad. Severity, for example, does not necessarily mean 'death.' For someone who is self-employed, catching COVID-19 may be seen as severe if they risk losing several weeks' earnings. For a single parent, it may be severe if their children have to be looked after by someone else. 'Long COVID' might also be perceived as a severe outcome. Coping appraisals reflect how someone views a given behaviour that might protect them from the threat. According to PMT, coping appraisal can be divided into perceptions about the efficacy of the behaviour (in our example, perceptions as to whether vaccines work), the costs of the behaviour (for example, the need to take time off work to go to a vaccination centre or worries about side-effects) and self-efficacy (the ability of the person to carry out the behaviour if they wanted to). In a paper published after the swine flu pandemic {JR/19 – INQ000196901} and subsequently updated for and endorsed by the Scientific Pandemic Influenza Advisory Committee {JR/135 – INQ000197093}, the factors specified by PMT were identified as associated with protective behaviours across multiple studies, in addition to other psychological factors specified in similar theories including social norms (how we think others expect

us to act), cues to action, anxiety, perceptions about communications from authorities and knowledge about illness and behaviours.

4.4. COM-B is a more recent approach that was developed by Professor Susan Michie, Dr Maartje van Stralen and Professor Robert West in 2011 and that takes in a broader range of factors that may influence behaviour. The model is widely used within psychology. I have provided as an exhibit the original paper that explains the model {JR/136 – INQ000197094}. Quotations that I give in this paragraph are taken from that work. The model proposes that a range of variables affect whether or not someone will enact a given behaviour and that these variables can be considered under the headings of capability, opportunity and motivation. Capabilities are attributes of the person – they reflect the person's "*psychological and physical capacity to engage in the activity concerned*." For example, if someone is asked to take a lateral flow test, they need to understand how to use a lateral flow test (psychological capacity) and have the manual dexterity required to manipulate the various bits and pieces that are included in the test kit (physical capacity). Motivation is "*all those brain processes that energize and direct behaviour.*" It is a person's willingness and desire to engage in a behaviour. Opportunity is "*all the factors that lie outside the individual that make the behaviour possible or prompt it*." For example, someone may be able to take a COVID-19 test and be motivated to take one, but if there are no lateral flow tests available or if the person cannot afford the bus fare to travel to a testing centre, then they may not have the opportunity to do so.

4.5. Psychological theories such as those described above often focus on the individual. Disciplines such as sociology and anthropology provide different perspectives and take a more detailed look at the way in which our social structures guide or inhibit our actions. I would do a disservice to my sociology and anthropology colleagues by attempting to explain their disciplines for them. However, the focus that such expertise brought was of great benefit to the advice given by SPI-B. For example, the 13 May 2020 SPI-B paper on the behavioural considerations of the "social bubbles" policy was an excellent example of the use of principles and perspectives from anthropology to consider the composition of, and challenges faced by, different households in the UK, including the elderly, foster families, socioeconomically disadvantaged households, multifamily households, disabled people and carers, keyworkers, and Hindu, Muslim, Sikh, Orthodox Jewish, Christian, Non-religious, LGBTQ+ and post-industrial working class households, among others {JR/137 – INQ000197107}.

4.6. On 3 April 2020, SPI-B produced a key paper that integrated the relevant perspectives from the different disciplines within the group with a focus on public health communication {JR/138 – INQ000196805}. This was written by a sociologist, and co-authored by two anthropologists, three health psychologists, one social psychologist, one health protection expert and me: it was signed off by the entire group. This paper was sent by the SPI-B secretariat to the Cabinet Office and was also published in an academic journal {JR/139 – INQ000197095}. The paper presented 11 key principles that would underlie the advice given by SPI-B on communication. I have abbreviated these below:

(1) Information must be clear and specific as to exactly what behaviours are required.

(2) 'Protect each other' messaging is promising, particularly building on messages of collective identify and supportive social norms.

(3) 'Stand together' messages from voices representative of and trusted by the group, and tailored to sub-groups based on gender, age or regional, ethnic or cultural affiliation would promote a sense of duty and affiliation – messages would be undermined by policies perceived as inequitable or divisive.

(4) 'This is who we are' messages should reflect and affirm group culture. Messages that imply people are doing undesirable things may have unintended harmful consequences.

(5) Avoid messages based on fear or disgust in relation to other people.

(6) Avoid authoritarian messages.

(7) 'Make a plan and review it regularly' messages can help break emotion or habit-based behaviours.

(8) Rewards, incentives and enablement tend to be more effective influences than punishment, disincentives or castigation. Support is needed to enable behaviours.

(9) Messages should be communicated via professionally designed and appealing mass and social media campaigns.

(10) Each campaign should have a defined behavioural aim and be carefully planned.

(11) Interventions should be co-designed and piloted with the relevant audiences, and evaluated using a mix of polling, qualitative and quantitative data.

4.7. These perspectives focussed on communication issues. A related set of principles were agreed by SPI-B in relation to guidance which extended beyond communication. In a paper on 20 April 2020 {JR/140 – INQ000196893}, SPI-B agreed that those tasked with updating guidance to minimise disease transmission should consider:

(1) Providing a credible rationale for changing the guidance;

(2) Assessing the effects of guidance changes on behaviour and transmission;

(3) Co-creating solutions to implement guidance;

(4) Allowing time for sector planning;

(5) Giving feedback about the effects of guidance changes;

(6) Providing precise guidance;

(7) Harnessing organisational structures and processes;

(8) Redesigning shared indoor and outdoor spaces to enable changes.

4.8. Such principles can help to inform public health interventions because they make explicit the range of factors that need to be considered when attempting to develop policies and guidance that take into account human behaviour. Understanding these principles can allow those in charge of developing policy or writing guidance to consider the wide range of factors that can enable or prevent people from following their advice.

4.9. A limitation of these principles is that they can come across as rather broad statements. While it is correct that, for example, people need clear guidance or that they will not be able to follow recommendations if they lack the opportunity to do so, it can more difficult to say exactly how to make a given piece of guidance clear for a specific section of the population or how to identify and resolve the barriers that are blocking behaviour. The best way to put principles derived from theory into practice, is to gather evidence about the specific situations that are under consideration.

4.10. The Inquiry has asked me to provide a description of the types of evidence that can be used to develop and test interventions to support behaviour change in a specific context. I will keep this description brief, and in doing so I will inevitably need to gloss over a large number of methodological issues and caveats. However, I am conscious that the Inquiry has the benefit of many Expert Witnesses who will be able to provide

a detailed assessment of the quality of individual studies if this is required. All I will attempt here is a basic summary of the types of data that are often used within behavioural science and that can support policy development.

4.11. A common first step is a literature review, to assess what evidence already exists for a proposed intervention. It is best if this is a 'systematic review,' in which a thorough search for evidence is conducted and criteria are specified in advance as to what type of study will be included. All studies that meet the criteria should then be included, regardless of what results they have produced. Such systematic reviews are common in the field of medicine to identify, for example, all studies that test a given drug against a placebo. However, they are also used within psychology and behavioural science more generally to assess the evidence for or against a given theory or intervention. Within behavioural science, a challenge often still remains in that the particular context of a planned intervention may not be covered by the existing literature. Whether an intervention that seems promising on paper will work in practice can be difficult to tell until it is attempted and evaluated. In the particular context of emergency response, a second challenge is that a rigorous systematic review can take six months or more to complete. Methods have therefore been developed that allow reviewers to trade rigour for speed, but even here producing a rapid review can still take weeks.

4.12. Qualitative studies are common within many disciplines that take an interest in behaviour. Typical qualitative methods include focus groups and one-to-one interviews. Participants drawn from a population of interest are asked to discuss a given issue in some detail. Interviewers often prompt them to discuss specific areas such as their knowledge of certain policies, their attitudes towards Government agencies, or their adherence to specific areas of guidance, but also allow them opportunities to raise unexpected points. The aim of qualitative research is to develop a detailed understanding of the range of factors that are involved in a given issue. The aim is not to quantify those factors. For example, a qualitative study might point out that lack of access to public transport, lack of awareness about recent guidance, and concerns around data protection are factors that affect whether people attend a testing centre. However, it would not rank those factors in order of importance. To achieve a good understanding of the full range of factors that are important, qualitative researchers often deliberately seek out participants who might have different views or experiences of a specific issue.

4.13. Quantitative studies give a better idea of how common a specific issue is, and how strongly it is associated with a given behaviour. Cross-sectional surveys are the most straight-forward approach. A classic example is a market research style opinion poll in which several thousand people answer a questionnaire. This approach allows us to quantify how many people say they are engaging in a given behaviour and to assess whether reported engagement in that behaviour is more common in, for example, women or in people who have higher levels of trust in the Government. Modern market research methods mean that data can be collected from several thousand people quickly (sometimes within one or two days). Common weaknesses of such approaches include uncertainties as to the representativeness of the sample (are the people who volunteer to take part in a study unusual in some way?), the difficulty of interpreting associations (does trust in the Government cause people to undertake a behaviour, does performing the behaviour lead to more trust, or does some third factor such as older age lead to higher trust and higher likelihood of following public health advice?), and the tendency of surveys to rely on self-report (how much do we trust the answers when people are asked to tell us about behaviours that they may not remember, or where it might be embarrassing or even illegal to admit to a specific behaviour?). More rigorous quantitative approaches exist that minimise these problems, but they can take longer to set-up and run.

4.14. Ultimately, the definitive evidence of the effects of any intervention that is intended to change behaviour is a randomised controlled trial. For example, to fully test whether an intervention such as providing greater financial support affects levels of adherence to a policy such as self-isolation, we should randomly allocate people who are asked to self-isolate to the current level of support or to an enhanced support package and then evaluate adherence in the two groups. Such studies can be challenging to set up and can take some time to run. Often, they are simply not possible or practical. However, they remain the gold standard form of evidence with which to assess the impact of an intervention. During the pandemic, few randomised controlled trials were run to test non-pharmaceutical interventions. While it is possible that many such studies would not have produced timely enough results to impact policy in the ongoing pandemic, it is regrettable that we will be entering the next pandemic without the benefit of this evidence.

5: The role of trust

5.1. The importance of trust is not unique to the COVID-19 pandemic. For example, in a review which I co-authored in 2012 on how to communicate with the public in the event of a terrorist attack involving a chemical, biological, radiological or nuclear weapon, we concluded that "*trust plays a crucial role in ensuring that people attend to messages*" {JR/141 – INQ000197097}.

5.2. Within the psychological literature, trust is generally seen as a good thing. A body of work suggests that people who trust public health agencies are more likely to adhere to public health guidance during a crisis than people are who have less trust. For example, a 2022 systematic review of reviews found that lack of trust was one of the most frequently reported factors associated with vaccine hesitancy {JR/142 – INQ000197098}. An evidence synthesis by the World Health Organization on factors associated with adherence to physical distancing brought together evidence from one high-quality and two moderate-quality sets of guidelines on this topic and concluded that "*public trust is an essential element of effective communication before, during and after a pandemic outbreak*" {JR/143 – INQ000197099}. A systematic review of factors affecting the use of contact tracing apps found that "*the lack of trust in government and their motives appears to be a key factor that creates a negative effect on people's decisions to install a contact tracing app on their phones*" {JR/144 – INQ000197100}. In a review of factors that affect engagement with more traditional contact tracing that I co-authored in 2020, we found that "*a predominant barrier to engaging with contact tracing was mistrust, of government, of contact tracing personnel, and of technology*" {JR/145 – INQ000197101}.

5.3. Guidelines produced prior to the COVID-19 pandemic also highlighted the importance of building trust. For example, in 2018 the US Centers for Disease Control and Prevention updated their guidance on crisis and emergency risk communication. The guidance has four key principles. One of these is "*building credibility and trust*." The World Health Organization's 2017 guidance on communicating risk in public health emergencies groups its recommendations under three themes. The first theme is "*building trust and engaging with affected populations*" {JR/146 – INQ000197102}. The SPI-endorsed review paper of 2011 relating to attitudinal factors associated with adherence to public health advice during a pandemic, concluded that "*communication strategies should maximize levels of trust amongst the public by being open and*

transparent in order to maintain the credibility of the information provided" {JR/135 – INQ000197093}.

5.4. There are some nuances within this literature, however. First, trust is probably not a unitary concept. Instead, it is composed of different factors. There is still some disagreement within the academic literature as to what exactly these factors are, but they probably include perceptions about whether a person is being open and honest with us, whether they are committed, caring, and competent, and whether they seem to be acting in our best interests {JR/147 – INQ000197103, JR/148 – INQ000197104, JR/149 – INQ000197105}. It is possible for someone to be rated highly on one component of trust, but not another. For example, focus groups with one set of UK participants during the pandemic found that people could refer to the Government's handling of the pandemic as incompetent yet at the same time describe the Government as trying to do the right thing {JR/150 – INQ000197106}.

5.5. A second nuance relates to the specific person who is trusted and the subject about which they are trusted. For example, in the UK when it came to COVID-19 vaccinations, perhaps it did not matter so much if you did not trust the Prime Minister, as long as you did trust the deputy Chief Medical Officer (dCMO) who was seen as a spokesperson for the vaccination roll-out. Indeed, the aphorism "speak with one voice" is often used within the crisis communication literature for precisely this reason. Even if someone does not trust the Prime Minister, the dCMO, or the leader of the opposition, maybe they trust their local mayor instead. As long as all of these figures are giving the same message, that person will hopefully find it being presented by someone that they do find credible. Within the UK, there is evidence that the importance of trust differs depending on the object of that trust. In one survey of 1,476 people, trust in the media, the government and experts, and perceptions about the Government's handling of COVID-19 were less important than trust in health organisations (the National Health Service and the World Health Organization) in affecting vaccination willingness {JR/150 – INQ000197106}. Similarly, a survey conducted in November to December 2020 assessed the association between vaccine hesitancy and trust in the UK Government, scientists working at universities in the UK, scientists working at private companies in the UK, and doctors and nurses in the UK {JR/151 – INQ000197108}. There was an association between hesitancy and trust in each of these groups, but the association with trust in government was much smaller than the association with trust in the other groups.

5.6. A third nuance is that trust may be more important in guiding some behaviours than others. In some situations, the role of psychological factors may effectively be drowned-out by other considerations. During a strictly enforced lock-down, when shops and workplaces are closed, people may have little opportunity but to adhere to the rules. Trust may have little to do with it. Even outside of lockdown, some behaviours may be more influenced by certain components of trust than others. Within the CORSAIR data, for example, perceiving information from the Government to be credible was associated with greater intention to share contact details of others with contact tracers if requested, but was not associated with intention to self-isolate or to request a test {JR/152 – INQ000196870}.

5.7. Fourth, although trust in messengers is generally seen as a good thing, in practice, it depends on what the trusted messenger is saying. Trust simply acts to amplify that message. In the US, for example, Fox News and CNN tended to take different editorial perspectives on the severity of the pandemic and the need for particular public health measures. Among US respondents to one series of surveys, trust in Fox News was associated with lower adherence to public health measures than trust in CNN {JR/153 – INQ000197109}. Within the CORSAIR dataset, we found some weak evidence that greater credibility of Government messages and greater satisfaction with the Government response were associated with a greater tendency to hold a stigmatising attitude towards the Chinese community within the UK, though we had doubts as to whether this association was causal {JR/154 – INQ000196874}.

5.8. Finally, I would note that the quality of the literature on trust is not always as good as we might wish. In particular, there can be a heavy reliance on cross-sectional and qualitative data, which can make interpretations challenging. Moreover, the findings are not always consistent. For example, CORSAIR data found little if any association between perceived credibility of Government messaging and respiratory or hand hygiene or avoiding others in February 2020 {JR/155 – INQ000196875}. An adequate understanding of the role of trust in driving public health related behaviour would require a properly resourced review of the literature.

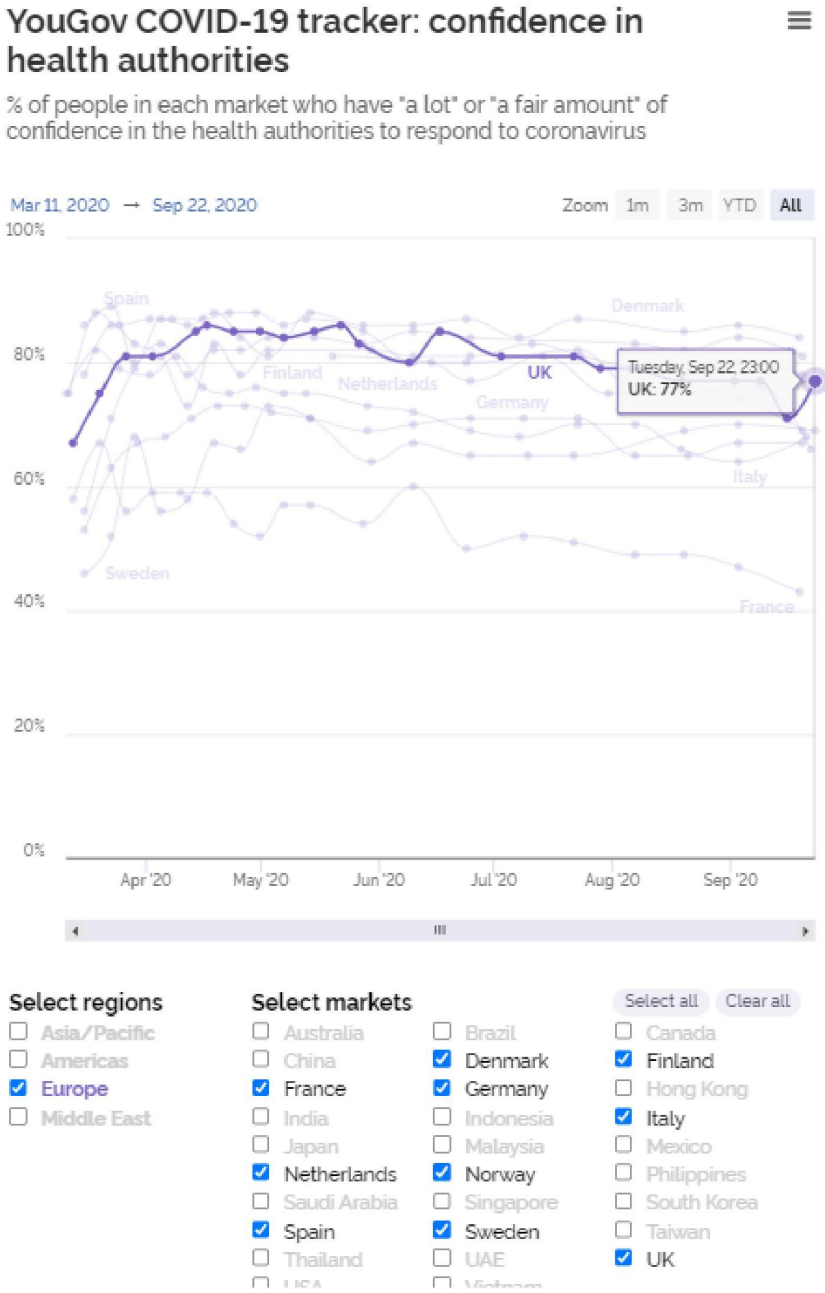
5.9. Within the UK, trust in various actors was tracked by several opinion pollsters during the course of the COVID-19 pandemic. YouGov tracked the percentage of people who thought the Government was handling the issue of coronavirus “very” or “somewhat” well. This is effectively a question about perceived competence. The same question was asked in ten European countries. I have copied a screenshot of their findings in

Figure 1. This gives a sense of the volatility in the results and hence the dangers of relying too much on comparing data from only two or three time points when trying to assess how trust changed during the pandemic. For comparison, in Figure 2 I have provided a screenshot of the YouGov data for trust in the ability of health authorities to respond to coronavirus. This was more stable in the UK throughout the pandemic.

5.10. I am aware that the Cabinet Office conducted polling twice a week throughout the pandemic via YouGov and I believe that this tracked changes in various aspects of trust. I do not believe I have access to a graph showing these data.

Figure 1: Percentage of people who think the government is handling the issue of coronavirus "very" or "somewhat" well. Source: Yougov.co.uk {data from Spain removed due to an unknown error}

Figure 2: Percentage of people who have "a lot" or "a fair amount" of confidence in the health authorities to respond to coronavirus. Source: Yougov.co.uk



5.11. During the pandemic, various events occurred that might have influenced some of the components of trust in specific people or institutions. The events surrounding the trip by Dominic Cummings to Barnard Castle that became public on 22 May 2020 have been widely discussed. A paper by Dr Daisy Fancourt at University College London explored the issue, using their ongoing survey work {JR/156 – INQ000197110}. This explored changes in public confidence in the Government's handling of the pandemic and reported that "*starting on May 22, 2020, there was a clear decrease in confidence in England, a decline that continued over the following days. There was no corresponding decrease in confidence in the health service.*" Data on self-reported behaviour was presented in an on-line appendix to the paper {JR/157 – INQ000197111}. These appear to suggest that a slight decrease in self-reported adherence to guidance also occurred.

5.12. The 'party-gate' scandal also led to a self-reported reduction in intentions to follow rules, with one YouGov survey finding that 46% of people reported being unlikely to follow restrictions over Christmas, of whom 10% gave as their reason that "Government don't stick to rules / Downing Street parties." {JR/158 – INQ000197112}

5.13. Focus groups conducted during the pandemic also found people who reported that their own unwillingness to follow public health guidance was because "*if those in positions of authority were unable or unwilling to follow rules, why should the public be expected to do so?*" {JR/159 – INQ000197113}.

5.14. I would caution against reading too much into these self-reported data. The Barnard Castle and party-gate affairs were politicised and it seems likely that some participants used the relevant studies either to express their displeasure about the events or to rationalise their own low adherence to guidance. I do not know whether the effects of either event are observable in more objective data such as rates of transmission.

6: SPI-B: Structure and working patterns

6.1. SPI-B was established at a SAGE meeting of 13 February 2020 and held its first meeting on 24 February 2020. It advised SAGE and Government departments on issues of behavioural science. Over the course of two years, SPI-B produced 95 advice papers and 8 additional papers relating to background or implementation. In total, these constitute over 1,000 pages of scientific considerations and commentary.

6.2. There are several specific aspects about SPI-B that it may be helpful to give an overview of, in terms of its structure and working patterns.

6.3. First, in terms of its remit, SPI-B focussed on behavioural issues relating to the pandemic and on the impact of interventions on wellbeing. It did not advise on what interventions should be pursued to reduce transmission rates, except in the context of pointing out where adherence to specific guidance was already high or had scope for further movement or where there were questions about how to sequence the introduction or relaxation of a series of measures which benefitted from a close consideration of the impact of this sequencing in terms of behaviour and wellbeing. We did not have the expertise to evaluate the likely impact of any given intervention on transmission; this was a matter for our colleagues in other SAGE groups (including SPI-M and NERVTAG). This was widely understood within SAGE and, as far as I know, Government. We also made this explicit in various papers, for example:

(1) *"SPI-B cannot comment on the impact of gatherings on disease transmission."* SPI-B: Insights on Public Gatherings 12 March 2020 {JR/160 – INQ000196748}

(2) *"SPI-B is not asked to comment, and has not commented, on what interventions are effective or when they should be triggered."* The Role of Behavioural Science in the Coronavirus Outbreak. 14 March 2020 {JR/161 – INQ000196749}

(3) *"{Understanding of a 'suppress and control' strategy} will need to be a joint endeavour across the SAGE groups. SPI-B can support in helping make explicit: the behaviours that are implicit in the strategy, who will need to undertake them, and at what stage of the pandemic."* What is the Best Approach to Encourage People to Engage with the Behaviours Required for a Suppress and Control Route? SPI-B Initial View. 22 April 2020 {JR/162 – INQ000196957}

(4) *"We do not address the timing of such changes (since this is the remit of SPI-M and SAGE)"* Suggestions for Messaging About Preventive Behaviours in the Next Phase of the UK's Response to the COVID-19 Pandemic. 3 June 2020. {JR/119 – INQ000197140}

(5) *"A variety of factors will inform the decision to revise the 2m social distancing guidelines including epidemiological and economic factors, which SPI-B is not in a position to comment on."* SPI-B: What are the Behavioural Considerations

Around Communicating Changes to the 2m Social Distancing Guidance. 16 June 2020. {JR/163 – INQ000197173}

(6) *"Identifying the behaviours that are of concern in their own right, or in combination, will require a multidisciplinary approach. This should bring together SPI-M insights about the combined traditional behaviours and the risks associated with these, EMG insight into the risk of infection in settings in which events are likely to take place and SPI-B expertise in individual and group behaviour."* Executive Summary: SPI-B Insights on Celebrations and Observances During COVID-19. 29 October 2020. {JR/164 – INQ000197211}

(7) *"We defer to SPI-M as to whether a modest impact on adherence to quarantine and / or uptake of testing is sufficient to balance any risk associated with a decrease in the duration of quarantine."* What are the Potential Behavioural Effects of Reducing the Duration of Quarantine for Contacts. SPI-B. 12 November 2020. {JR/165 – INQ000197216}

6.4. Second, SPI-B was largely reactive. Our role was to respond to questions that arrived from SAGE or Government departments. Sometimes, we found it necessary to challenge the assumptions that lay behind the questions (see Paragraph 13.7). But given that these questions were the ones that policy makers were apparently struggling with, we did our best to answer them. Occasionally, as I will discuss later, we were able to propose commissions to Government or to help shape commissions. But rarely was a paper produced that was entirely 'self-initiated' by SPI-B. These generally related to topics that participants felt were in danger of being overlooked. These included, for example, a paper on how to prepare messaging when major changes in restrictions occur {JR/119 – INQ000197140}. This followed the 2020 change in messaging from "stay at home, protect the NHS, save lives" to "stay alert, control the virus, save lives." The policing and security subgroup of SPI-B also produced a horizon scanning paper which raised the issue of a possible increase in community tension as restrictions continued {JR/166 – INQ000197189}. Of course, this responsive nature of our work did not prevent participants from working together and producing papers outside of the group, and many did collaborate in this way. For example, participants variously joined the behavioural science subgroup of Independent SAGE, worked with the British Psychological Society's COVID-19 Co-Ordinating Group, shared expertise with the World Health Organization or sat on the scientific advisory groups for the Welsh and Scottish Governments. Participants also published widely on issues to do

with the pandemic and I am aware of 430 peer-reviewed academic journal articles that have so far been produced by participants on the group and which have the words "covid" or "coronavirus" in them.

6.5. Third, despite the similarity in names, SPI-B did not operate in the same way as SPI-M. While SPI-M kept a watch on patterns emerging in specific data streams and presented a rolling series of analyses to SAGE about these data, SPI-B did not have an equivalent function and rarely conducted any detailed analyses of data. This does not mean that the individuals who took part in the group did not conduct research and analyse data. They did, and participants in the group produced a substantial number of peer reviewed papers as a result. But this was as part of their usual academic roles, rather than as part of SPI-B. Where analyses were conducted by SPI-B, this was when data were straightforward and descriptive and could easily be incorporated into a one-off paper to illustrate a specific point. For most of SPI-B's existence, this was implicit in the way that we worked. For example, in April 2020 when asked about the best approach to encourage people to engage with the behaviours required for a 'supress and control' policy, we noted that evidence would be required but that the Government should not expect that SPI-B would be providing this evidence. Specifically, we said:

(1) "*For each specific behaviour, or cluster of behaviours, a rapid evidence review should be commissioned to identify factors associated with adherence. SPI-B participants may wish to volunteer to conduct these reviews themselves. Other resource might be found through the University of Edinburgh public health group {See Review of facemasks in the community and the impact on the spread of infection}, the Health Psychology Exchange, or NIHR infrastructure including the Policy Research Units or Health Protection Research Units. {…} Before starting it is important to check who else is working in this field, in order to co-ordinate and compare approaches and findings*."

…

(2) "*{Rapid qualitative work} could be taken on directly by SPI-B participants as part of their academic roles, incorporated in the existing qualitative research conducted regularly by DHSC, PHE and others, or commissioned via NIHR infrastructure. {…} Scope exists for items to be include in existing Government polls*." What is the Best Approach to Encourage People to Engage with the Behaviours Required for a Suppress and Control Route? SPI-B Initial View. 22 April 2020. {JR/162 – INQ000196957}

6.6. Similarly, when asked about evidence gaps around certification for SARS-CoV-2, we reiterated that "*SPI-B neither commissions, not conducts, original research.*" {JR/94}

6.7. Although implicit for most of our work, after confusion over one paper, I also set out my thoughts in writing as to why I felt SPI-B should not conduct original analyses, which I shared with the co-chairs and secretariat and which I have provided as an exhibit {JR/167 – INQ000197114}.

6.8. On those occasions where we determined that a specific analysis should be looked at on a rolling basis, we flagged this as a job for a Government department to take on. For example, on 22 March 2020 I co-authored a paper that was requested by SAGE, which assessed current rates of adherence to specific recommended behaviours among members of the public {JR/168 – INQ000196772}. This was at the more detailed end of original data analysis that SPI-B conducted, and was something we took on because it was an urgent request with a 48-hour deadline and we were not clear who else would do it if we did not. In practice, at the SAGE meeting where this was discussed, the Office for National Statistics also presented their data in this area {this can be seen at point 23 in the minutes of SAGE #18: JR/169 – **INQ000052717**}. In our paper, we observed that there was a wide variety of data that could be used to explore adherence, that monitoring adherence would be important throughout the pandemic, and that this was not something the volunteers providing advice via SPI-B would have the capacity to take on. Our advice was therefore that "*we recommend that a single group within Government takes ownership of adherence measurement: optimising measures, coordinating activity and rapidly sharing all data.*"

6.9. Fourth, SPI-B did not provide behavioural data for use in epidemic modelling. Participants in SPI-M and SPI-B collaborated on several academic papers and took part in multiple joint SAGE working groups. For example, I collaborated with modelling colleagues on the 'COMIX' project, which used survey methods to assess changes in contact rates across the UK which could then be used to give an early indication of the likely changes in transmission rates. But although the Inquiry have asked for my opinions on whether there may be lessons to be learned from the different international approaches to the incorporation of behavioural science into epidemiological modelling, this is not area of expertise for me.

7: SPI-B: Size and diversity

7.1. Over the course of two years, SPI-B grew and evolved. Initially, the group was relatively small. As commissions arrived that needed additional expertise and as the volume of work that was being asked of us became more apparent, we took on more participants. Recruitment of participants was initially relatively ad hoc. Given the urgent need for input, the original list of participants consisted of people who we were already aware of as working in this broad field, including participants who had previously served in SPI-BC during the 2009/10 swine flu pandemic and colleagues who were familiar with disaster / crisis response work and were participants of other related Government advisory groups. The composition and diversity of the group grew as additional participants were suggested, volunteered or were actively sought out because of a need to involve someone with expertise on a particular topic. However, we did observe that the initial ad hoc approach to recruiting participants had left the group lacking in diversity, in particular with an over-representation of people who were white and male. As the initial crisis period of February to April 2020 receded, a refresh of the participantship was undertaken, with additional participants being proposed by the secretariat, chairs and others, with a particular view to increase diversity in terms of gender, ethnicity, region of the UK and academic discipline. We deliberately sought participants from the UK, partly because of an assumption that experts in other countries were likely to be busy advising their own governments and partly because familiarity with the UK context is helpful in understanding how the UK public might respond to specific changes in guidance, political scandals, media furores, national events and so forth.

7.2. By the end of the process, 48 experts had taken part in SPI-B. In Annex 1, I have given the names of the 44 who did not object to being publicly identified on the SAGE website, and I have added their main discipline. This is not always easy. Experts often cross disciplinary boundaries and are sometimes hard to pigeon-hole. By my count, the group included:

(1) Seven health psychologists

(2) Six sociologists / social epidemiologists

(3) Five general psychologists / behavioural scientists

(4) Four social psychologists

(5) Three behavioural insights specialists / experimental psychologists

(6) Two experts in health informatics

(7) Two epidemiologists / modellers

(8) Two experts in criminology or policing

(9) Two experts from the field of law

(10) Two anthropologists

(11) One educational psychologist

(12) One clinical psychologist

(13) One clinical epidemiologist

(14) One social marketing expert

(15) One expert in health economics

(16) One expert in economics and statistics

(17) One expert in policy

(18) One paediatrician

(19) One ethicist

7.3. The group included experts who considered behaviour from individual, social and cultural perspectives. It included people who considered behaviour in context and who focussed on inequalities and stratification of the population. I would note, for example, that we included six sociologists or social epidemiologists and that many other members of the group also consider such issues in their work within, for example, psychology and anthropology.

7.4. Disciplinary diversity was also deliberately built into the co-ordinating group when this was set up. I have highlighted members of the co-ordinating group in Annex 1. Disciplines represented included sociology, anthropology, social marketing, health economics, psychology (including social and health psychology), clinical epidemiology and behavioural economics.

7.5. I am conscious that one concern raised by the Inquiry is whether SPI-B had the expertise to allow it to comment on behaviour in context, inequalities and stratification. SPI-B produced dozens of papers that highlighted the importance of these issues. There was a consensus in these papers that "*behaviour is influenced by social context as much as individual psychology*." That quote comes from one of our core 'principles'

papers written on 3 April 2020 {JR/138 – INQ000196805}. Similarly, the first recommended step in the SPI-B paper on the best approach to encourage people to engage with the behaviours required for a suppress and control route {JR/162 – INQ000196957} was for research to be commissioned into *"what contextual factors or concomitant interventions will affect adherence to social distancing or self-isolation? {…} Are there particular groups or members of the population who may find these behaviours more difficult and how can they be supported to undertake them?"*

7.6. SPI-B considered these issues from multiple perspectives. This included consideration of, for example:

(1) adherence specifically among shielding households {JR/168 – INQ000196772};

(2) the impact of school closures on children from minoritized ethnic communities, socio-economically disadvantaged communities and keyworker families, children with special education needs and disabilities, and children at risk of harm and abuse {JR/170 – INQ000197214};

(3) the impact of the intersection between geographic boundaries and socio-economic boundaries on the possible effect of releasing lockdown neighbourhood by neighbourhood {JR/171 – INQ000196920};

(4) the unequal policing of communities and of specific groups within those communities (e.g. young men) {JR/172 – INQ000197085};

(5) unequal access to outdoor space according to socio-economic status {JR/173 – INQ000196968};

(6) the importance of considering a wide range of contextual factors when considering the sequencing of restriction easing {JR/174 – INQ000197041};

(7) the importance of equity in allowing members of religious communities to gather {JR/174 – INQ000197041};

(8) detailed consideration of household size, structure and type (include religion, ethnicity, sexual orientation, age, employment and clinical vulnerability) in weighing-up how to structure a 'bubbles' policy {JR/137 – INQ000197107};

(9) consideration of the specific nature of job type, in combination with ethnicity and socio-economic status, when considering how to support adherence to guidance {JR/175 – INQ000197118};

(10) co-creating guidance to encourage procedural justice and generation of equity {JR/176 – INQ000197190};

(11) principles for developing public health messaging for communities from different cultural backgrounds {JR/177 – INQ000197192};

(12) the potential for a mass asymptomatic testing programme to lead to marginalistion and stigmatisation of certain communities {JR/178 – INQ000197199};

(13) the challenges of controlling transmission within the home for highly networked families, households with vulnerable members, socioeconomically deprived households, multigenerational households, disabled people and carers, domestic workers and houses of multiple occupation {JR/179 – INQ000197201};

(14) the potential for low participation in certification schemes among marginalised communities, widening inequalities {JR/180 – INQ000066114};

7.7. The work of SPI-B in such areas was complementary to the work of other SAGE groups which focussed on aspects of inequality and specific population subgroups, including dedicated groups considering clinical risk factors (the COVID-19 Clinical Information Network), children (the Children's Task and Finish Working Group), ethnicity (the Ethnicity Subgroup) and social care (the Social Care Working Group).

7.8. This is not to say that SPI-B would not have benefitted from even greater expertise in these areas. It may be that there are issues relating to inequalities or subgroups that we could have considered in more detail. To give one example, in retrospect I can see that we did not produce a specific paper on issues around low uptake of healthcare services among people with serious non-COVID related health needs, such as cancer screening.

7.9. SPI-B did not use any formal diversity monitoring process. Twenty out of the 44 participants in Annex 1 were female, including three of the four chairs. In terms of ethnicity, I believe 36 out of 44 would likely self-describe as White. I do not know how many might have been clinically vulnerable to COVID-19. However, I do know that some members of the group were receiving treatment for cancer during the pandemic, had close family members in a care home, were pregnant, or had children with disabilities or mental health needs. In terms of age, we did tend towards the 40 to 65yr range. We managed to offset this to a degree by the inclusion of several early career

researchers who were in their 20s or 30s. Nonetheless, we did lack lived experience at the older end of the spectrum. We also tended towards the upper end of the socio-economic spectrum.

7.10. Diversity was undoubtedly a good thing for the group. Discussion was improved by having members easily able to comment on, for example, the impact of social distancing guidelines on Muslim communities, or challenges around social interaction for mothers of young children. I believe that diversity was particularly relevant in helping us understanding the challenges caused by restrictions and in making our recommendations more specific. It is notable, for example, that our papers on higher education contained many specific ideas around implementation of guidance, which drew on our personal experience of that sector. However, I would caution that diversity within the group was not sufficient to ensure we provided specific advice. I would note again that despite personal experience in the group around the challenges of seeking care for non-COVID-19 illnesses during a pandemic, we did not write a paper on this. I believe a more systematic way of understanding these challenges was required. In terms of understanding where challenges existed, we relied to a large degree on the questions submitted to us by the Government as reflecting their priorities, which in turn were presumably informed by their own studies on challenges within the community (including polling, focus groups, and field trips run by DHSC and the Cabinet Office). Two members of SPI-B did seek to expand on this early on. On 27 April 2020 SPI-B discussed and endorsed their plans to submit a bid for funding for a "Government Listening Initiative" which would have served as a broad-based rolling consultation exercise with members of the public across society. I cannot remember what happened to this proposal, except that it was not funded. We returned to this issue on 5 February 2021. When asked about our main challenges for SAGE to feedback to the Cabinet Office we said, as one of them, that "*It is increasingly accepted as best practice to involve stakeholders from all target groups and communities in collecting and interpreting evidence. A large panel of people of all ages, education levels, ethnicities etc. would allow a rapid dialogue with them about the issues, experiences and views of members of their communities, including of course their views of the advice we are putting together.*" {JR/181 – INQ000197116}.

7.11. I would also note that the output from SPI-B could never hope to address the specifics of every challenge facing society as a result of the pandemic. In this regard, SPI-B was clear about the need for the Government to understand these challenges and develop sensible solutions by working with affected communities. These are principles of co-

production. We urged that guidelines and messages be co-produced with the affected communities in many of our papers. It was one of the running themes throughout our advice. For example, in April 2020 alone, we advised:

(1) *"Working intensively and rapidly with community members to identify barriers and facilitators to adhering to changes in restrictions on activity and to optimise communication of the guidance in terms of accessibility and acceptability to all sectors of the population."* Easing restrictions on activity and social distancing: Comments and suggestions from SPI-B, 1 April 2020. {JR/182 – INQ000196783}

(2) *"Interventions should be co-designed and piloted with relevant audience members using on-line engagement and focus group."* Implementation and communications: Harnessing behavioural science to maintain social distancing. 3 April 2020 {JR/138 – INQ000196805}

(3) *"It is also important that {reducing restrictions} is commenced in a safe manner, with appropriate planning, preparation, guidance, support, testing and feedback from and to the community."* Social distancing review – SPI-B comments. 14 April 2020 {JR/183 – INQ000196849}

(4) *"Co-create solutions for resuming activity safely {…} Members of different sectors and community can help identify opportunities, challenges, and solutions to resuming activity safely and should be involved from an early stage."* Principles for the design of behavioural and social interventions. 20 April 2020 {JR/140 – INQ000196893}

(5) *"Focus on co-production of adherence and messages attempting to manage interaction between the public and police."* SPI-B return to SAGE on the impact of an exit strategy on crime and public order. 21 April 2020 {JR/184 – INQ000196904}

(6) *"Co-create solutions to safely resuming activity. Members of different sectors and the community can help identify opportunities, challenges and solutions to resuming activity safely and should be involved from an early stage. Community stakeholders and representatives (for example, workplace, school and religious communities, councils and charities) can play an active role in anticipating, reporting, and managing potential barriers to implementing activity changes or infection control."* Behavioural principles for updating guidance to minimise population transmission. 20 April 2020 {JR/185 – INQ000196980}

7.12. Co-creation was one of our key principles for developing communications and guidance. On 8 July 2020, we devoted an entire paper to articulating how to co-create guidance given how important we thought it was in ensuring that the insights and priorities of, and challenges faced by, diverse groups in the community were listened to {JR/176 – INQ000197190}.

8: SPI-B: 'Groupthink'

8.1. I understand that the Inquiry is interested in whether there was any 'group think' in the SAGE subgroups. I do not believe there was within SPI-B. Participants were comfortable in challenging each other to present evidence for a given view or position. Documented disagreements included:

(1) How people might react to being asked to shield if the rest of society did not enter lockdown {JR/186 – INQ000196744}.

(2) Whether alcohol should be banned at mass gatherings {JR/187 – INQ000197197}.

(3) The possible risks and benefits of face coverings {JR/188 – INQ000196882}

(4) The longevity of SPI-B itself {JR/189 – INQ000197117}

8.2. In, I believe, early April 2020 we invited the director of policy for the British Psychological Society, Kathryn Scott, to attend meetings as a semi-independent observer. She observed our sessions and asked participants to contact her in confidence with any feedback. She emailed me after several of the meetings with comments on the conduct of the group and tips on how to improve my chairing and the running of the sessions. She provided multiple aspects of feedback, but she did not suggest that 'groupthink' was an issue. The closest I believe she came to this was advising me that in one meeting I had asked a "'*do you not think…' question, which is one to watch for leading questions from the chair. But I wasn't concerned that people felt they had to agree with you!*" {JR/190 – INQ000197120}. I can see that in response I mentioned that I had phrased the statement that way because it was "*my attempt to encourage a bit more challenge within the group.*" But I can also see from my correspondence with Kathryn that only two weeks later I was concerned that "*I think we need to walk a line between challenge and beasting*" after one particularly strong line of questioning to a civil service colleague {JR/191 – INQ000197122}. I think my

concerns over too little and too much challenge just reflected the normal ebb and flow of meetings.

8.3. I would add that the Chairs were also comfortable in challenging participants to support their views further. For example, on one occasion, a paper that a team had spent some time writing was declined for approval by the Chairs on the basis that it was insufficiently evidenced.

9: SPI-B: Resources

9.1. The people who participated in SPI-B did so on a voluntary basis. Many worked long hours in order to produce papers that they hoped would improve guidance and policies. This work was in addition to their normal day jobs as university professors. The tempo was sustained for a long period, much longer than most expected. This led to high levels of stress for some. The Government Office for Science laid on wellbeing sessions and briefings on personal security for participants, that were welcomed by those who attended.

9.2. Within SPI-B, specific resources made available to us included:

(1) A highly efficient civil service secretariat;

(2) An embedded, early career researcher hired by the Government Office for Science to assist us in conducting literature reviews. We were grateful to the three people who held this post;

(3) Funding provided to the employers of some participants who were involved in multiple roles across SAGE, to provide backfill for some aspects of their day jobs. My employer received £22,500 in lieu of the time I provided across the pandemic. Unfortunately, this arrived almost a year after I had begun work with SAGE and long after the most urgent need for support had passed. Backfill in future incidents needs to be provided more rapidly.

9.3. I believe the fact that SAGE advisors worked in a voluntary capacity did not harm the advice that was given. Advisors were motivated by a desire to help and would have worked to the same level regardless of funding. There is a separate question that should be considered around how long this should be allowed to continue for in any given incident. I will discuss later the importance of having normal Government processes take over from SAGE in a timely manner. But during a crisis, having academics provide advice on a voluntary basis is not something that troubles me.

10: SPI-B: Challenges

10.1. Looking back, three main challenges stick in my mind. The first was stress. At several points of the pandemic, the workload was intense, the timelines for advice were short (sometimes less than 24 hours) and the importance of the work was obvious. To give a sense, I can see that on 12 March 2020 I sent this email to the secretariat {JR/192 – INQ000237289}:

"I am indeed at (beyond) the point of being overwhelmed. You are right, boundaries are starting to blur. We are all eager to help - and will inevitably leap in when an email arrives marked urgent - but you do indeed need to protect us. In particular, with everyone recognising that we are not civil servants and can't (and should not be made to feel that we are) doing that role or doing anything more than giving advice that you then can bin if you see fit. Emphatically not aimed at colleagues cc'd btw! More a general comment. Sorry – you will see that I am quite stressed today!"

10.2. This was something others were also picking up on. For example, in an exchange between myself and Kathryn Scott on 28 April 2020, Kathryn noted that "*I sensed a bit of fatigue, a couple of people mentioning long hours and late nights. To be expected, but one to watch.*" I responded that "*Fatigue – yup. Long hours, late nights, no weekend, and repeat that for several months. However, even directors in PHE take protected leave during crises – they know they have to. We need to enforce that for the academics too – and the secretariat*!" {JR/193 – INQ000237290}.

10.3. The second challenge was around public statements made by SPI-B participants. The group met to discuss this early on and agreed that discussions in SPI-B must remain confidential. In relation to non-SPI-B matters, many SPI-B participants took an early view that they would generally only engage with the media about their own research. Other members of the group engaged more widely and expressed views about the Government's policies. We also discussed this within SPI-B, in particular to ensure that colleagues were clear with the media that they were speaking in a personal capacity and not representing SPI-B or SAGE. My impression is that, within Government, there was disquiet about this. The group received suggestions from Sir Patrick Vallance that vocal, public criticism of Government policy might not be the best way to encourage policymakers to engage with our advice. I am also aware that there was at least one question in the House of Commons complaining that SAGE participants were being 'allowed' to comment on policy in this way {JR/194 – INQ000197124}. I do not know if

this issue actually inhibited engagement with our advice, or the willingness of Government departments to discuss issues with us, but this was certainly raised several times as a risk by members of the secretariat and SAGE. My attitude to it was that the academic participants were not civil servants and they retained their academic freedom to engage with anybody they wished to, and about anything they wished to (providing SPI-B discussions remained confidential, as agreed), although the fact that this might reduce the impact of SPI-B was also a challenge. I am not sure I ever worked out how to balance these two points and my feeling is that there remained a degree of culture clash between the academic and civil servant personnel within the SAGE system over this. Some examples of this clash are given below:

(1) Heavy-handed redactions applied to an early paper by SPI-B that was released into the public domain led a robust public response by some participants in a Guardian article of 8 May 2020, and a similarly vocal internal response. Unfortunately, it also resulted in someone unknown leaking the unredacted paper to the press. Sir Patrick Vallance offered to speak to the group about the issue of redactions, which he was keen to limit to the absolute minimum and the secretariat also had to inform us that a leak enquiry would be set-up, that this was taken very seriously within Government and that if SPI-B was viewed as 'leaky' then it might reduce the desire of people within Government to engage with us. I am conscious that our secretariat were put under a lot of stress as a result of this incident.

(2) A Guardian article quoting Professor Robert West on 25 May 2020 in relation to the Barnard Castle incident made several comments about discussions within SPI-B, including "*Those of us on Spi-B have been increasingly concerned about the extent to which the government's approach to the behavioural sciences and the messaging, particularly, has been at 180 degrees from the kind of advice that we have been sending into the Cabinet Office"* and "*I know {concern} is widespread among the group but not everybody feels comfortable speaking out and I completely understand that. But there has been considerable and growing unease."* This came days after a SPI-B meeting where we agreed not to discuss the content of meetings or to hold ourselves out as speaking for the group. We sought guidance from the secretariat on this, which coincided with tweets by other SPI-B participants about the incident that said things to the effect of "As a member of SPI-B…," and wider conversations about how to develop SPI-B and SAGE more generally now that the immediate

crisis of March 2020 had passed. As a follow-up I discussed with Professor Robert West the risks of such reporting reducing the likelihood of open discussion taking place within the group {JR/195 – INQ000197130}.

(3) The decision in June 2020 of multiple participants of SPI-B to join a subgroup of independent SAGE took me by surprise and put us in an awkward position. While I defended their right to speak to anyone they wanted to as independent academics, I discussed it with the secretariat and Sir Patrick Vallance, both of whom were of the view that it was a further reason why policymakers might feel reluctant to be open with the group about the problems they were facing {JR/196 – INQ000197131}. Stuart Wainwright (Director, GO-Science) noted "*it raises real issues of trust for policy makers in HMG in the ability to bring things to the committee as a 'safe' space.*" {JR/196 – INQ000197131} Sir Patrick Vallance commented that "*The effect is that Government departments are now becoming very wary of putting anything to SPI-B because of a risk of leaks or misuse."* {JR/67 – INQ000196969}. I spoke on the phone to Sir Patrick about this, but I don't think either of us had a clear answer on how to resolve the issue. Ultimately, as I said to him in the email chain "*they should have the right as academics to talk to anyone interested in listening, including I-SAGE*"

10.4. A third challenge was around publication. This was a persistent frustration. SAGE made a mistake in not publishing papers and a list of participants early on. Doing so was clearly in the public interest. However, even once a principle of openness was agreed, putting that into practice required a degree of doggedness from academic participants. The publication approval process within Government often led to lengthy delays in the release of papers as they were checked by multiple departments or held back for policy reasons. Confusions as to what counted as 'a SPI-B paper' did not help. For three papers that I remain convinced were SPI-B papers, approval to release them on the SAGE website could not be obtained and my research unit ended up having to add a new page to host them and ensure they were publicly available. I still do not understand why this was necessary.

11: The use of data within SPI-B

11.1. SPI-B largely wrote papers which drew on overarching principles and theories within behavioural science, and which articulated how these principles applied to the particular issue at hand. Ideally, direct evidence would have also been available on the

specific issue, which would have improved our advice. Often, however, good quality, directly relevant evidence was missing, largely because it takes time to commission and produce such evidence. This problem of a lack of direct evidence was explicitly described in many of our papers {JR/197 – INQ000196743, JR/186 – INQ000196744, JR/198 – INQ000196747, JR/160 – INQ000196748,JR/161 – INQ000196749, JR/199 – INQ000196750, JR/168 – INQ000196772}.

11.2. As an example, on 14 March 2020 we made the following observation in a public-facing summary of the work of SPI-B: "*The coronavirus outbreak is a unique challenge. Identifying an evidence base from which to make behavioural science recommendations is difficult. This is made harder because there is evidence to show that how people respond to infectious disease outbreaks differs between countries {1,2}. While there is evidence from the swine flu outbreak, the current context is different and it is not clear how well the evidence translates. Many comments from SPI-B are by necessity based on members' knowledge of theory and evidence from different, albeit related, contexts*." {JR/161 – INQ000196749}

11.3. The lack of directly applicable evidence led us to call for additional research to be conducted. For example, on 9 March 2020 in a paper summarising our discussions around how best to provide advice and support to people in self-isolation, we flagged the need for basic research on this to be conducted as a priority. We said that:

"*relevant research needs, for rapid consideration, include: qualitative research with individuals who have experienced self-isolation to explore barriers to and facilitators of adherence, and how they occupied themselves; {and} adapting ongoing DHSC focus groups to obtain feedback on {PHE's} advice from people from different economic backgrounds and at-risk groups*." {JR/200 – INQ000196746}

11.4. In February 2021, in response to a request from the SAGE secretariat for our top "vexing questions" that SPI-B were still struggling to answer, the three co-chairs of SPI-B raised three points that related to the absence of good quality data. {JR/181 – INQ000197116}.These were:

"What are people doing, rather than saying that they are doing? Understanding behaviour is crucial to understanding transmission and designing interventions. But most behavioural metrics are self-report, gathered using online panels from market research companies. When 90% of people tell us that they are washing their hands regularly and thoroughly, should we take that at face value? Other surveys on specific populations suffer from serious response bias. A recent major survey of (self-reported)

adherence to self-isolation had a 16% response rate – why did 84% of people decide they would rather not complete the questionnaire? Should we base decisions on this? Observational measures of behaviour have practical and ethical challenges. But we should explore them.

What are the views and experiences of under-represented people and communities? Online surveys and focus groups will never capture the views of some hard-to-reach sectors of the population, who are particularly important as they are typically at higher risk and less adherent. It is increasingly accepted as best practice to involve stakeholders from all target groups and communities in collecting and interpreting evidence. A large panel of people of all ages, education levels, ethnicities etc. would allow a rapid dialogue with them about the issues, experiences and views of members of their communities, including of course their views of the advice we are putting together.

Difficulties in understanding the effectiveness of NPIs due to lack of coordination within and between sectors, and a lack of insight into what works: Guidance about NPIs can look quite different when translated in the work environment. Some of these differences are due to physical/structural challenges (e.g. ventilation/distancing), others are influenced by organisational and financial barriers, etc. For example, trying to identify approaches to NPIs, support for students, testing, etc., in universities involves reaching out to networks and visiting individual university websites. Conversations with UUK, DfE, and others suggests that they do not have a hub of knowledge around this either. It would be useful to set up a 'What Works' approach to NPIs for different industries where they can gather data, monitor rates, and generate evidence about effectiveness in order to support and coordinate response within these institutions. This isn't just about schools, FE and HE. I see this as a useful tool across industry, too."

11.5. As illustrated in the quotation in paragraph 11.3, the main impact that the absence of good-quality data from the field of behavioural science had on SPI-B, was on our ability to provide specific and directly applicable suggestions, as opposed to more general advice drawn from theoretical considerations. As we moved out of the immediate crisis period, it was specific advice that Government agencies often wanted. I will give three examples to illustrate that this point was raised with me by people who operated within the Government.

(1) First, on 5 June 2020, in an email about the future evolution of SPI-B, the head of SPI-B's secretariat commented that "*we are hearing more about the need for*

specific, actionable behavioural advice (rather than general advice – which we already have)" {JR/201 – INQ000197132}.

(2) Second, a similar sentiment was conveyed to me by Sir Chris Whitty in a phone call on 5 October 2020. This call was triggered by comments he had made in an online conference that I attended, to the effect that behavioural science was not having as effective an input as it might. We discussed the evidence provided to date, and Sir Chris Whitty noted that the specific advice he received from anthropology colleagues about funeral practices in relation to the 2014 West Africa Ebola outbreak was the style of advice that might be most beneficial at that stage of the pandemic. I followed up on this by suggesting that a PHE colleague who attended SPI-B might also be able to attend DHSC meetings to understand their priorities and asking that someone from Sir Chris Whitty's office sit in on a piece of work that SPI-B was developing around young people to suggest areas where the advice could be more specific.

(3) A third example came in an email exchange with Dr Hugo Harper, who attended the SPI-B co-ordinating group in a personal capacity but who was also a member of the Behavioural Insights Team. Dr Harper was asked by our secretariat to discuss the future evolution of the group as part of wider exercise to get feedback, and he shared his thoughts with me in an email of 12 March 2021 {JR/202 – INQ000197135}. Among other things, he noted that "*recommendations purely based on existing literature can be necessarily pretty vague / principle based*" and "*more primary quantitative research is needed to bring out the real value of behavioural science*."

11.6. As time went on, more evidence became available relating to issues under discussion in SPI-B papers, and our advice became more specific. Our papers around self-isolation are a good example of this. These developed from a short, reference-free, summary of basic principles on 9 March 2020 {JR/200– INQ000196746}, to more detailed suggestions about the need for financial, informational, emotional and tangible support on 16 September 2020 {JR/203 – INQ000197202}, and finally to a detailed example of what a full, evidence-based package of support might look like in the appendix of a paper on 15 January 2021 {JR/204 – INQ000197227} However, the issue remained that in many instances, highly specific evidence relating to a given problem was unavailable, leaving us to make points based on theoretical considerations and to call for specific research to be carried out.

11.7. Although I have been directed to a note in a SAGE meeting of 4 February 2020 that says that "*a lack of data-sharing is seriously hampering understanding of WN-CoV*" I believe this related to a need for epidemiological data from China. This was of relevance to SPI-M and potentially NERVTAG, not SPI-B.

12: The relationship between SPI-B and other groups

12.1. The chairs of SPI-B attended almost every SAGE meeting. There might be some exceptions where the point under discussion was highly specific to, for example, modelling, but this was rare if so. We also attended weekly catchups between the subgroup chairs to discuss forthcoming commissions, suggest ideas and discuss progress. This allowed us to understand the work that was currently underway, propose areas where joint work between the subgroups would be useful, suggest ideas raised by subgroup members for papers or discussion, and ask for clarification on commissions. During the formal SAGE meetings, papers were discussed and questions or points for revision raised. It was common for the authors of papers to join SAGE in order to present and discuss their work. In my view, these processes worked well. There was a good interaction between SAGE and SPI-B, with commissions flowing down to SPI-B from SAGE, being discussed and refined, reports being fed back up to SAGE, and future commissions being discussed throughout. However, I am conscious that I had a relatively privileged position in SPI-B and was able to see those stages of the process in action.

12.2. The Inquiry have asked me to comment on how consistently the work of the subgroups, such as SPI-B and NERVTAG, was incorporated into SAGE's advice. This is a slight misunderstanding of the way that SAGE operated. Most papers from SAGE were produced by the subgroups, or by joint working parties brought together by members of the subgroups. As such, the work of the subgroups was often not 'incorporated' into SAGE's advice, but rather it constituted SAGE's advice. The subgroup papers were reviewed and endorsed by SAGE, circulated to policy makers and posted on the SAGE website. In some circumstances, more generic papers were produced that incorporated the work of experts from across SAGE. For example, a paper of 21 April 2020 considered general principles for the design of behavioural and social interventions {JR/140 – INQ000196893}. In such cases, relevant experts tended to write sections on their own areas, with a nominated lead for the paper ensuring everything was pulled together.

12.3. An obvious exception to this was the SAGE minutes, which count as an output in their own right. These were produced rapidly after each SAGE meeting and circulated within Government after being signed off by the two chairs: Sir Patrick Vallance and Sir Chris Whitty. Except in rare circumstances, they were not checked by other participants before they were circulated. I believe there were occasions when minutes needed to be withdrawn, a misunderstanding in them corrected, then they were reissued. This was not a regular occurrence.

12.4. There were several teams working on issues relating to behavioural science within Government. These included:

(1) The Behavioural Insights Team;

(2) The Government Communication Service;

(3) The Department of Health & Social Care communications team;

(4) The Public Health England / UKHSA communications team;

(5) The behavioural science team in PHE / UKHSA's Emergency Response Department;

(6) Various NHS Test and Trace advisory and working groups that focussed on large events, self-isolation and testing uptake.

12.5. SPI-B meetings regularly included representatives from these groups, either as observers or as participants acting in a personal capacity. Where members of these other groups took part in SPI-B in a personal capacity, they could help develop papers, though this was rare in practice. However, SPI-B and these other groups did not formally work together on producing advice.

12.6. I wanted invitations to go to these groups to ensure that SPI-B was sighted on relevant work going on across Government. This was useful. Colleagues from these teams helped us to understand data that we might otherwise have been unaware of, including, for example, reports from field trips by the Cabinet Office or experiments conducted by the Behavioural Insights Team. I suspect that being able to observe our discussions also provided those teams with useful insight into our own perspectives and quandaries.

12.7. I cannot comment on how the various Governmental groups interacted with each other. However, relationships between SPI-B and these groups were generally good. I believe that SPI-B did occasionally step onto their turf, often without realising it and

not, as far as I know, in any particularly problematic way. This is a challenge that relates to the issue of how specific to be with behavioural science advice. The more specific it is, the more useful. However, it also becomes quite operational. I can give two examples of where these boundaries became blurred.

(1) First, in his email to me of 12 March 2021 {JR/202 – INQ000197135}, Dr Harper from the Behavioural Insights Team noted that "*in current form there is a risk that people think SPI-B is a substitute for doing their own research*" and that some of the work needed was "*probably more at the post doc level* {by which I believe he meant hands-on} *than the established professor level*."

(2) Second, in an email of 30 March 2021 {JR/205 – INQ000197136}, Dr Laura de Molière (Head of Behavioural Science in the Government Communication Service) reported that "*I heard that there are sometimes instances of both SPI-B and us being asked the same question (and there might be other teams where there's duplication also). I think this comes from no bad place, it's probably that people aren't quite sure who to go to with what "kind" of behavioural science question. I think it's not easy for a lay person to work this out, so sometimes they go to both of us. I do think there are 'types' of questions though that SPI-B is in a much better position to answer, and types where our internal CO team can run with it (for instance in a rapidly changing policy environment where we literally huddle around the piece of paper together, or where insider knowledge of other impacted areas can help us make links around behavioural risks that SPI-B members cannot spot)*."

12.8. Over time, academic participants of SPI-B began to collaborate with the other behavioural science-related groups in venues outside of SPI-B. This allowed participants to work more directly on specific studies that were being conducted. By way of example, I ended up working with:

(1) the DHSC Communications Team by way of analysis of their polling data in CORSAIR;

(2) the Data and Analytics working group for NHS Test and Trace through attendance at their meetings;

(3) the Office for National Statistics as an advisor for their surveys measuring adherence to self-isolation;

(4) UKHSA through collaboration on multiple research projects as part of our HPRU partnership;

12.9. Other colleagues also developed their own collaborations with Governmental groups outside of SPI-B, for example, the Testing Initiatives Evaluation Board, the Events Research Programme and the Community Champions programme. I believe these individual collaborations were a natural evolution for SPI-B, with our experts providing more detailed support to the specific studies needed to answer key questions.

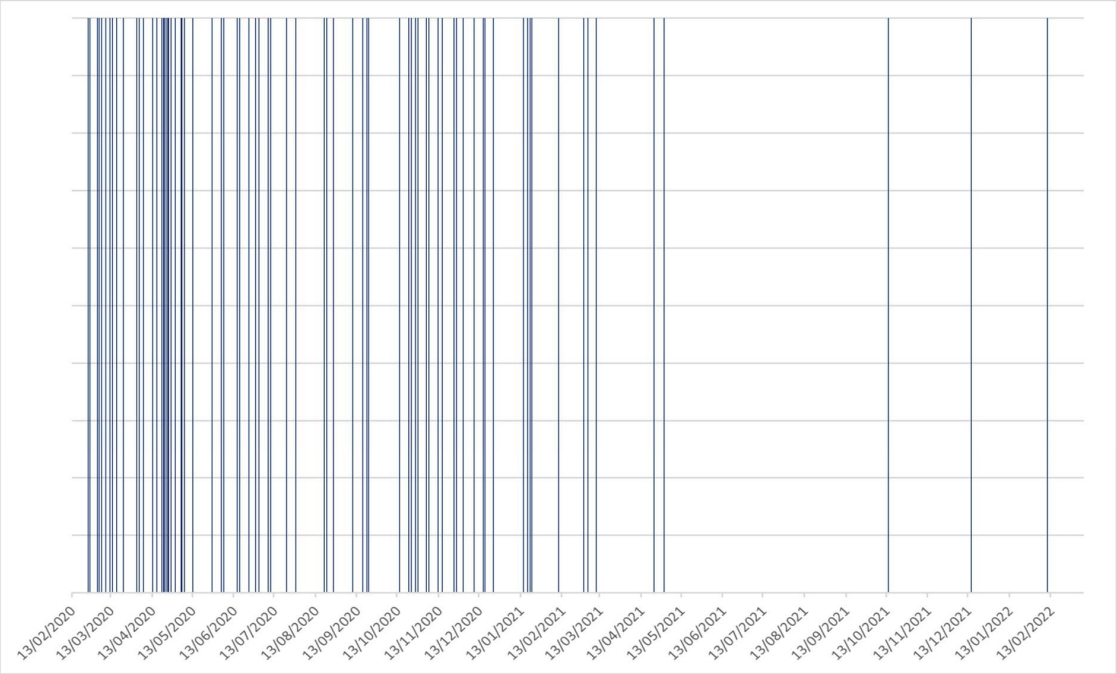
13: How was SPI-B advice commissioned

13.1. Commissions for SPI-B advice could arrive from SAGE and also directly from Government departments. Commissions were typically triaged by the SPI-B secretariat to ensure that they were suitable for the group. In particular, they needed to relate to an emergency or to an issue that cut across multiple Government departments and they had to be something that the group could provide a useful view on. The chairs also got involved in these discussions. Occasionally, commissions were declined. For example, one proposed commission from DHSC in January 2021 concerned identification of the factors that had supported public mental health during the pandemic. This was clearly important, but not something that required the response of an emergency advisory system. Commissions could also be returned with a request for greater clarity on what was being asked. Feedback from the secretariat to those putting together the commissions was helpful because commissions in the early days of the process were sometimes unclear or vague. For example, I recall that a request on 21 April 2020 for SPI-B's "*initial view on behaviours required for a suppress and control route*" left us confused as to exactly what would be helpful in such a paper, particularly given that, whatever it was, the Government expected us to produce it within 36 hours. I am not sure how many commissions arrived directly from Government departments as opposed to via COBR and then SAGE, but this information might be available from the Government Office for Science.

13.2. By and large, I believe that commissioning was used appropriately for SPI-B and that the group's role was understood correctly by decision makers. There were instances where questions were vague, did not relate to an emergency or should have been directed elsewhere. I note again, for example, the comments by Dr de Molière that "*I heard that there are sometimes instances of both SPI-B and us being asked the same question (and there might be other teams where there's duplication also). I think this*

comes from no bad place, it's probably that people aren't quite sure who to go to with what "kind" of behavioural science question." {JR/205 – INQ000197136}. However, I am not aware of any major problems that resulted from this. As far as I know, confusions were usually easy to resolve through the intervention of the secretariat. Indeed, I believe that good evidence that commissioning was used appropriately for SPI-B comes from the reduction in commissions that we received over time. This is partly because it became harder to justify a request for a new report as an emergency and partly because other systems became set up within Government to provide evidence and support decision making. These other systems included, as examples, the Community Champions programme, the Testing Initiatives Evaluation Board, ONS work monitoring adherence to various interventions, the NHS Test and Trace data analytics team, the Events Research Programme, and a series of rapid evidence reviews carried out by Public Health England / UKHSA's Behavioural Science Insights Unit. While participants from SPI-B helped those groups (e.g. by sitting on advisory boards in their capacity as individual academics), for the Government to continue to commission SPI-B to work in these areas would not have been appropriate. The gradual decline in commissions is shown in Figure 3.

Figure 3: The dates of SPI-B reports from 13 February 2020 (when the group was set up) to 9 March 2022 (when it stood down). Each vertical line represents one report.



13.3. In terms of whether the questions posed to SPI-B were the correct questions, I do not have a particular view. They were the questions that policy makers within Government were puzzling over, and therefore it was right for them to ask us. For example, I was personally surprised that the first question posed to us by the Government was, essentially, 'will people riot?' This has been discussed in detail in the academic literature, and colleagues have concluded that "*over 50 years of psychological, sociological, and documentary research evidence converges on the view that collective behaviour in mass emergencies and disasters is typically socially structured and adaptive*" and that the inevitability of civil disorder is a myth {JR/206 – INQ000197137}. As such we responded on 25 February 2020 that "*large scale rioting is unlikely. It is rarely seen in these circumstances. Acts of altruism will predominate, and HMG could readily promote and guide these*" {JR/207 – INQ000196741}. It could be argued that we were asked the wrong question and that we should instead have been asked about the promotion of altruism. However, I am now aware that, according to the then Secretary of State for Health's 'Pandemic Diaries' book, on 25 February 2020 "*Home Secretary Priti Patel is stressing there could be riots if we go too hard on social restrictions. In every COBRA meeting, the Home Office talks about the work*

they're doing to ensure we are ready if there's a massive backlash and people literally take to the streets or just systematically ignore the rules." SPI-B was not aware that these conversations were taking place within Whitehall, but I am glad that someone thought to ask us for our opinion on it.

13.4. My belief is that we were right to assume that the questions we were being asked had purpose. I do not believe that attempting to second-guess what 'should' be important for policymakers would have been helpful. While some might complain that policymakers did not sufficiently understand science, one could equally argue that scientists do not sufficiently understand policy.

13.5. In this regard, I would note that, although I have been pointed towards the suggestion by the Institute of Government that "*ministers' desire to avoid a lockdown (and its attendant social and economic costs) framed the advice commissioned from SAGE, and contributed to the delay in considering these measures and, in turn, the decision to implement them*" {JR/208 – INQ000197138}, it is difficult for me to give a sensible opinion about this. I was not privy to conversations taking place in COBR at the time, and do not know what the motivation was for setting us the questions that we were asked. That said, it does seem plausible to me that SAGE was not asked to consider more extensive packages of interventions because ministers had already ruled out such a response given the social and economic costs of lockdown in favour of a more carefully calibrated response and thus wished SAGE to prioritise its time on exploring alternative options.

13.6. I have also been directed to a passage in an Institute for Government report suggesting that "SAGE members have said, for example, that the delay in recommending the first lockdown was influenced by scientists believing it would be politically unpalatable." Issues around the timing of interventions were a matter for SPI-M. This was agreed on in a SAGE meeting of 3 March 2020 {JR/209 – **INQ000119719**} where an action was for "SPI-M to provide timings for when interventions should be implemented." But the suggestion that any delay was because advising lockdown was 'unpalatable' does not tally with my recollection of SAGE meetings. The group was asked to address the questions that it was set in terms of a specific set of interventions that were under consideration, and it did so.

13.7. Although the Institute for Government also notes that "ministers need to ensure that scientists feel able to offer candid advice," my recollection is that candid advice was available in SAGE. For example, I recall one member of SPI-M asking Sir Patrick

Vallance whether Ministers had understood, at an emotional level, what the thousands of deaths illustrated in SPI-M charts actually meant, as opposed to seeing them as just a line on a graph. I do not recall the exact date, but this was well in advance of lockdown occurring. I cannot remember the conversation verbatim, but I think Sir Patrick replied along the lines that they had.

13.8. Commissions received from policymakers were not set in stone. We were able to refer them back and ask for clarification or suggest amendments. For example, when on 12 January 2021 DHSC sought to engage our help, they did so by providing a rough outline of five possible topics that we could pick from and then inviting one of the co-chairs to discuss with them what might be possible {JR/210 – INQ000197139}. On some occasions we accepted a commission but provided an explanation of why the assumptions underlying some questions were incorrect. For example, on 21 April 2020 when asked "*how should we expect people with different criminal proclivities to behave?*" our Policing and Security subgroup responded that "*The question raises interesting issues with regard to an assumption of the drivers of criminality as merely dispositional, whereas contemporary research and theory recognises that situation factors are equally if not more important for general crime patterns (e.g. routine activity theory). The question also veneers the complexity of crime (i.e. what kind of crimes are of concern).*" {JR/211 – INQ000196931}. SPI-B could also place topics on the SAGE agenda for discussion, which could then lead to a commission. The Policing and Security subgroup are again a good example of this. At one point in the pandemic, they became concerned that the unequal and ongoing effects of lockdown were causing social division and increasing the likelihood of disorder. They raised this with me, I secured a slot for them to discuss it at SAGE on 02 July 2020, and they produced a paper that was then discussed at SAGE and sent to the Home Office together with an action for them to discuss law and order issues directly with the Home Office and to return to SAGE for a broader discussion if required.

13.9. Another example of how we could influence commissioning appears in the note for the 20 October 2020 SPI-B Co-ordination Group meeting, where I can see an action that I was to work with the Cabinet Office Communications team "*to agree what is helpful and possible in reply to commission on symptom recognition*" {JR/212 – INQ000197141}. This was a topic that I was particularly concerned about. I believe it was on our agenda because I had raised it as an issue in SPI-B and with DHSC after reviewing a worrying trend in the CORSAIR data.

13.10. SPI-B also wrote some papers that were self-initiated. An example of this was a paper produced on messaging following the controversy surrounding the move from "stay at home, save lives, protect the NHS" to "stay alert, control the virus, save lives." {JR/119 – INQ000197140} In practice, I am not sure how effective this was. Although I believe this particular paper was sent to the Government Communication Service, because there was no clear "ask" for the paper, I am not sure if anyone paid much attention to it. In my view, seeking buy-in from policy makers by getting them to commission work was a better route than spontaneously providing reports, because it made it more likely that a) we would understand the challenges that policy makers were facing and b) they would engage with the advice that we then produced.

13.11. In summary, while some commissions were restrictive and occasionally confusing, we were able to iterate commissions and seek feedback. We were also able to suggest commissions to a degree, via various routes.

14: How SPI-B advice was developed

14.1. Upon receiving and agreeing a commission, the SPI-B chairs would usually call for volunteers to write the paper with a named lead being allocated to it. Where additional expertise was needed, suggestions could be made by anyone, and the chairs and secretariat also searched for additional experts when needed.

14.2. In the initial configuration of SPI-B, ideas for the paper would be discussed by the entire group, and the draft paper would also be reviewed and revised by the entire group. As the group became bigger, this process became more difficult to manage. With only limited time for group discussions there was a tendency for some people to hold the floor a little too much, while others seemed to deliberately limit contributions that might have been valuable to provide time for others to speak. After we moved to a co-ordinating group model in September 2020, the co-ordinating group would pull together writing groups for individual papers (suggesting names or seeking volunteers). The intention was for draft papers to be shared with everyone, but in practice because of time pressure papers were often reviewed and signed off by the co-ordinating group. This seemed a reasonable compromise between inclusiveness and timeliness, given that those with the most obvious expertise on the topic were already on the writing group. Overall, I think the co-ordinating model was a useful approach which balanced the need to be fair to volunteers in terms of the input demanded from them and the need for oversight from a multidisciplinary panel. This

was also the general view of the co-ordinating group in a discussion about this on 5 January 2021 {JR/213 – INQ000196781}.

14.3. In order to keep the wider group aware of developments, a weekly email was sent to all with a summary of activities. We also had an attempt to introduce a set of less formal meetings to discuss in more detail topics of interest to members, starting with issues around test, trace and isolation. These led to the commissioning of useful peer-reviewed academic papers from our embedded academic researchers, but my feeling is that these meetings were not a productive use of time overall and they were short lived.

14.4. Exceptions did occur to the models of signing-off papers, particularly when time was tight. For example, some papers needed to be produced within a 24 or 48hr deadline and delivered directly to SAGE. In these situations, the Chair would review them first and discuss further in the SAGE meeting. Examples include two urgent papers written over the weekend of 21/22 March 2020 {JR/214 – INQ000196761 and JR/168 – INQ000196772}, which are discussed further in paragraph 17.7} and similarly rapid work over the weekend of 19/20 September 2020 which related to the increase in cases that were being seen {JR/215 – INQ000197203 and JR/216 — INQ000197204}.

14.5. SPI-B was not directed on what was and was not acceptable in terms of scope, messages, language or reference to policy. I think there were exceptions when we recommended policies rather than providing advice about the science, which was usually an error caused by the speed we were working at, but I cannot recall specific examples of this. We did receive advice on how to frame papers so that they would tackle issues that policy makers were wrestling with and be most useful for them. However, I never felt this was direction, rather than advice or suggestions. There was no pressure to change our work. I would highlight one, regrettable occasion when a public-facing version of a SPI-B paper was heavily redacted before it was released. This led to a furious response from some participants, who took to the press and social media to describe the interference as "*bloody silly*" and "*reminiscent of Stalinist Russia*," and with accusations that the report had been censored because "*what is recorded in the redacted document is us criticising those {Government} proposals*" {JR/217 – INQ000197125}. This was only the first of a series of public criticisms of Government actions made by participants, which included academic articles, open letters, media articles and social media posts. My point here is that had participants felt that they were being somehow "directed" in terms of the advice they were providing,

they would not have been shy in expressing their views on the matter. Equally, giving uncomfortable or "unpalatable" advice to government was not something that participants in SPI-B had any qualms over. I would refer again to my email to Kathryn Scott about the "beasting" one civil servant received in a SPI-B meeting (paragraph 8.3).

15: How was advice received

15.1. After advice left SPI-B or SAGE, it often appeared to disappear into a blackhole. We were sometimes told by the SPI-B secretariat that a paper had been "well received," but generally this was as much feedback as we had. We were in the dark as to whether it was read (and if so, by whom), understood or challenged, whether it was seen as interesting or unworkable, whether other evidence existed within the Whitehall machine that conflicted with the paper or might be useful to us in a future update, and whether it led to any change in anything. Usually, we could only guess by watching statements made at No10 press conferences whether our work had been taken into account, acted on or ignored. I did regularly raise this issue with the secretariat who also recognised this as a frustration. How effectively the Government used the expert guidance and advice that SPI-B and SAGE provided is therefore not something I can comment on, as with the evidence from CORSAIR and the HPRU (paragraph 2.15) whether and how papers were read and considered is not something I have much insight on for most of our work.

15.2. Feedback would have been useful in helping us to understand how to improve future papers. Given that SPI-B produced over 100 papers, each with multiple pieces of advice, it would be a herculean task to assess how each recommendation mapped onto the innumerable policies that were put in place across the UK. However, some SPI-B advice clearly was taken on board. For example, the decision to pay £500 support payments to low-income households who needed to self-isolate followed a SPI-B paper recommending that improved support was needed {JR/203 – INQ000197202}. Similarly, the policy of social bubbles that was introduced appeared to be similar to recommendations that appeared in one of our reports {JR/137 – INQ000197107}, while our paper on the role of community champions {JR/218 – INQ000197209} led to regular engagement between the authors and MHCLG, with the Government scheme "*being set up using the principles of the paper*" {JR/219 – INQ000196777}. Other aspects of our advice did not seem to have impact. For

example, although we advised dozens of times that guidance needed to be clear to people, the ever-changing set of complex guidelines that were given out seemed confusing. This is discussed further in paragraph 22.15.

15.3. I have been pointed towards an Institute of Government quotation, which says that "*Decision making at the centre of government was too often chaotic and ministers failed to clearly communicate their priorities to science advisers*." I do not know how decision making at the centre of Government occurred and cannot comment on whether it was chaotic. However, I note that the Institute of Government goes on to describe in their report that "*The government shifted between several different forums of decision making: first COBR, then a smaller C-19 group centred around the prime minister and key ministers, then two cabinet sub-committees dealing with strategy and operations respectively.*" Once the COVID-19 taskforce was set up, SPI-B did begin to have a more direct relationship with policymakers. We had an introductory meeting with representatives from the task force, we had clear points of contact, we were able to directly discuss existing papers with them (e.g. around self-isolation), we could ask about the data that was being used to support certain policies (e.g. the 10pm curfew) and we could discuss evidence gaps (e.g. around COVID-19 certification).

15.4. It is the case that in several meetings of SAGE, participants complained that they did not understand what the Government's priorities were and that this hampered their ability to provide advice. For example, was there a certain level of mortality below which the Government would countenance allowing normal social and economic activities to resume? Where certain areas to be left open at all costs (e.g. schools)? I believe these issues primarily affected SPI-M, who needed to understand what interventions to model. I believe they did find it difficult to provide useful advice where such issues were unclear. The lack of clarity around strategy was less of a challenge for the reports produced by SPI-B. I do not recall any dramatic challenges in this regard.

15.5. One challenge in understanding how advice was being received by Government was that the Chief Medical Officer and Government Chief Science Advisor acted as the main interlocutors with policy makers. This freed-up time for SAGE participants to focus on getting the science right. It also ensured that evidence was communicated to policy makers by people who are experienced in doing this and who understand how to engage ministers in complex technical matters. However, it did also mean that the scientists producing the evidence were unable to get direct feedback on their work. I

did not have any particular concerns about this method of communication from SAGE to COBR, particularly as government observers attended SAGE in order to understand the science discussions that were happening. I do not believe that having the GCSA and CMO as interlocuters led to delays in communicating advice. Not only did observers attend SAGE to see the discussions for themselves, but I also remember Sir Patrick Vallance and Sir Chris Whitty leaving SAGE in order to go straight to COBR or No10 in order to give an update.

16: The end of SPI-B

16.1. On 09 March 2022, the chairs of SPI-B wrote to us to inform us that SPI-B would cease to meet. In practice, the pace of work had already declined dramatically, with only six papers being produced by the group in the preceding 12 months. In an article in the Guardian on 17 September 2021, some of my colleagues from the group ascribed this decline to a deliberate attempt by the Government to "*sideline*" the group because it provided "*uncomfortable truths*" on issues such as vaccine passports and masks {JR/189 – INQ000197117}. I do not believe that this was the case. SPI-B was only ever meant to be an emergency stop-gap measure. In a crisis, when decisions must be made almost immediately, policy makers need the best advice possible under the circumstances. In these situations, directly applicable evidence may not be available on, for example, how people are reacting, or why they are or are not adhering to advice. In this situation, behavioural science experts can help by taking existing principles, models and theories and applying them to the current situation, combined with their knowledge of previous analogous situations and whatever evidence is available. But as time goes by, it becomes possible for detailed research to be commissioned from a wider range of academic, governmental and third sector groups and for dedicated teams to be assembled within government to tackle specific issues in detail. When this happens, the emergency mechanism becomes steadily less important. This is a good thing. In the case of SPI-B, I do not think that the winding down of its functions was because, as suggested in the Guardian article "*there's just no interest in evidence or science on the behavioural side*." Instead, I think it was because there was investment in behavioural science teams within government. For example, I understand that before SPI-B was wound down, UKHSA recruited a team of behavioural scientists to work on COVID-19. It was timely for the normal processes that the Government uses to commission research and advice to take over. I would also note that many

participants in SPI-B remained involved in the COVID-19 response, but via different mechanisms including as independent advisors for specific Government studies or initiatives.

16.2. I believe a similar argument could be made for SAGE as a whole. Clearly, the events of early 2020 were a national emergency. Ministers needed the best science advice possible, as quickly as possible. However, the need for rapidity means that academics were pulled in for an unknown length of time, with limited understanding of the level of commitment required, and then are asked to advise on a very broad range of topics. It was a positive thing that more focussed groups within Government, such as the Testing Initiatives Evaluation Board began to be set up to tackle these issues as these brought together experts from inside and outside of Government to focus on specific tasks in detail. A faster move away from needing to use the ad hoc, general processes of SAGE would, in my view, have been a positive step.

16.3. I am not familiar with the emergency science advisory processes outside of the UK so cannot comment on whether they offer alternative models. But if SAGE is required to be activated for a similar duration in future, three suggestions I would make to improve its functioning are that: first, rapid provision of funding for backfill is provided to universities to allow their academics space to focus on the SAGE work; second, a careful induction is provided to academics prior to joining to ensure that they are happy with the likely workload, understand the remit, and are given some good examples of how to write a useful SAGE paper; and third, care is taken to avoid unnecessary proliferation of meetings, subgroups, participants and papers.

16.4. Whether these suggestions extend beyond SAGE to other aspects of the UK's science-advisory mechanisms I do not know. However, I would suggest that collaborative working between scientists and policy makers could be improved by a general understanding of the dividing line between science advice and policy and by ensuring that everyone involved understands that scientists should not assume that their advice will be adopted and, equally, are not accountable for policy decisions. My perception during the pandemic was that, where meetings occurred in which policymakers and scientists discussed issues together and co-produced the commission, we then produced more helpful papers because we understood the challenges and uncertainties that were being faced.

17: SPI-B and fear

17.1. One of the key factors that motivates people to undertake behaviour to protect their health when faced with a specific hazard is whether they perceive themselves to be at risk {JR/220 – INQ000197142}. Risk perception is itself traditionally seen as a product of whether someone feels that a particular hazard is likely to affect them and how severe they believe the consequences will be if they are affected. As I noted in paragraph 4.3, severity is not just measured in terms of the likelihood of dying. It also encompasses factors such as whether the person will lose income, miss out on valued social events, or be unable to fulfil important family roles. Perceiving oneself to be at risk can lead to worry, anxiety or fear, and both the cognitive and emotional components of risk perception can be important in driving behaviour. Equally, taking action to reduce perceived risk by engaging with effective protective behaviours reduces worry, anxiety and fear.

17.2. Studies have shown that as someone's perception of risk increases, so too does their likelihood of engaging in protective behaviour, particularly when the protective behaviour is seen as effective. I have exhibited three independent reviews of the evidence in this field which reported that:

(1) "*The present review supports the idea that risk appraisal has a causal role in changing behavior—interventions that were successful in heightening risk appraisals led to changes in subsequent intentions and behavior.*" {JR/221 – INQ000197143}

(2) "*The results are in line with the theoretical predictions. Threat and efficacy interact in their effects on behaviour, such that threat only has an effect if efficacy is high, and efficacy only has an effect if threat is high.*" {JR/222 – INQ000197144}

(3) *"(a) fear appeals are effective at positively influencing attitude, intentions, and behaviors; (b) there are very few circumstances under which they are not effective; and (c) there are no identified circumstances under which they backfire and lead to undesirable outcomes*" {JR/223 – INQ000197145}.

17.3. More recently, a systematic review of 77 academic studies conducted during the COVID-19 pandemic found that "*a high-risk perception towards COVID-19 predicts, in general, compliance with preventive behaviors and social distancing measures*" {JR/224 – INQ000197146}.

17.4. Such evidence is why, for example, the British Psychological Society's advice on delivering effective public health campaigns during COVID-19 recommended "*Reach{ing} people who do not perceive themselves as at risk by accurately describing the health threat, severity of the threat and the risk to self and others and ensure you couple this with information on how to reduce the risk to motivate action whilst avoiding excessive fear.*" {JR/225 – INQ000197147}

17.5. Similarly, a 2021 evidence synthesis for the World Health Organization concluded that "*measures to highlight the immediacy and susceptibility of the community to a pandemic health risk may be necessary to improve adoption of, and adherence to, preventive measures. Accordingly, public communication might benefit from targeting such perceptions of susceptibility and personal risk in order to improve uptake among groups with little or no intention of adopting physical distancing measures.*" {JR/143 – INQ000197099}

17.6. As with trust, it seems likely that the influence of risk perceptions change depending on the behaviour in question and the context. For behaviours perceived to be of limited effectiveness, risk perceptions likely have little impact. Similarly, when contextual factors determine someone's ability to engage with behaviours, risk perceptions will also likely have limited importance. For example, if someone is financially unable to stay at home, or cannot participate in a specific risky behaviour such as going to a crowded venue because these venues have been shut, then risk perceptions may not matter.

17.7. Over the weekend of 21-22 March 2020, SPI-B was asked to produce two urgent papers to be delivered directly to a meeting of SAGE on 23 March 2020. I led on one of these. This was an analysis of the current level of adherence among the population to the voluntary guidelines that were in place to reduce transmission of the virus. {JR/168 – INQ000196772} Professor Susan Michie led on the other. That was a paper outlining the options that the Government had for improving adherence still further. {JR/214 – INQ000196761} The latter paper contained 10 options relating to general social distancing and four options relating to shielding by people in clinically vulnerable groups. It has received attention because it contained the following passage as the second of the 14 options:

"Perceived threat: 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, although levels of concern may be rising (9). Having a good

understanding of the risk has been found to be positively associated with adoption of COVID-19 social distancing measures in Hong Kong (10). The perceived level of personal threat needs to be increased among those who are complacent, using hard-hitting emotional messaging. To be effective this must also empower people by making clear the actions they can take to reduce the threat (11)."

17.8. The paper went on to explain that the spill-over effects from this option "*could be negative*" and that the equity of the option was "*uncertain*."

17.9. I will address the comments that have been made about this option. Before I do, it is important to be clear about the context in which that passage was written. There are four points to bear in mind.

17.10. The first point is that, at the time the paper was written, the strategy of the Government was, in the Prime Minister's words, to "*squash the sombrero*" of COVID-19. By this, he meant controlling the spread of infection in such a way that the NHS would not become overwhelmed. The Prime Minister articulated the plan in his address to the nation of 23 March 2020 as follows: "*To put it simply, if too many people become seriously unwell at one time, the NHS will be unable to handle it - meaning more people are likely to die, not just from Coronavirus but from other illnesses as well. So it's vital to slow the spread of the disease. Because that is the way we reduce the number of people needing hospital treatment at any one time, so we can protect the NHS's ability to cope - and save more lives.*" {JR/226 – INQ000197148}

17.11. The second point of context is that the risk that the NHS would be overwhelmed, leading to many people dying from COVID-19 and from other illnesses and accidents that would receive suboptimal treatment, appeared to be pressing. On 16 March 2020, a modelling team at Imperial College London had released a report suggesting that, in the absence of action, the UK might face hundreds of thousands of deaths, high levels of hospitalisation and the risk that health services might become "*overwhelmed many times over.*" {JR/227 – INQ000197149} This, the report noted, would occur "*in the (unlikely) absence of any control measures or spontaneous changes in individual behaviour.*"

17.12. This leads to the third point of context. At the time the SPI-B reports were produced, there were almost no legally enforced control measures. The interventions that were being used to limit the spread of infection were almost entirely voluntary and it was unclear if the Government intended for this to change.

17.13. The fourth and final point of context is the extent to which those voluntary behaviour changes were occurring. This was being analysed during the weekend of 21-22 March and formed the basis of the first SPI-B report. Data suggested that nearly half of respondents to recent surveys reported that they had not stopped seeing friends. Similar numbers reported that they had not stopped seeing members of their family who did not live with them or going to their place of work. Among people for whom shielding advice might have applied, somewhere between a third to a half of people had not completely stopped seeing friends or members of the family who did not live with them. Ipsos MORI polling from the time suggested that 28% to 33% of people aged 55 to 75 reported being 'not very' or 'not at all' concerned about the risk posed by coronavirus {JR/228 – INQ000197150}. Google places data suggested that in some areas, rush hour traffic was still high.

17.14. Debate over the option presented in the SPI-B paper often fails to take the context above into account and / or skips out sections of the wording. The text of the option says that it does not apply to everyone, but that perceived threat only needs to be increased "*among those who are complacent*." It does not, as one commentator has suggested, provide the Government with "*a charter to exaggerate the risks*." Rather, the option says that what is beneficial is "*having a good understanding of the risk*." I am aware that some people view this as being at odds with the line that "*it could be that they are reassured by the low death rate in their demographic group, although levels of concern may be rising (9)*." My interpretation of that line is that just because COVID-19 might not kill you, this does not mean that it is not a threat to you. As I have noted, losing weeks of wages, being unable to care for your children while in hospital, or needing an emergency admission for appendicitis or a motorcycle accident in an NHS that has been "*overwhelmed many times over*" could also pose threats to your wellbeing. Unfortunately, in many cases where the option is quoted, it is stripped of the line about the need for people to have "*a good understanding of the risk*," the text stating that "*this must also empower people by making clear the actions they can take to reduce the threat*" and the references to the evidence base underlying the option. This gives a misleading impression of the text.

17.15. That said, I do believe that the text could have been better worded. This reflects the speed at which it was written. First, the paper presents options to the Government, as is made clear in its title. In the body of the text, it should not have said what 'needs' to be done, but rather what Government might 'choose' to do. This applies to all of the 14 options given in the paper. Second, the context could have been explained more

clearly. Had there been time for the paper to be reviewed in SPI-B before progressing, these points would likely have been spotted and corrected. As it was, the paper went straight to SAGE on 23 March 2020 where it was only one of many urgent papers. I attended the meeting by teleconference and mainly contributed to discussions around existing adherence to interventions, which was the subject of the paper that I had led on. I would also have introduced Professor Susan Michie to present the options paper, but I do not recall her being offered the chance to speak and I do not recall there being any detailed interrogation of the paper. A version of the paper was submitted for publication in the British Journal of Health Psychology in April 2020 {JR/229 – INQ000197179}. In it we did take the opportunity to tighten up some of the wording by making clearer that "*The perceived level of personal threat needs to be increased among those who are complacent, using hard hitting emotional messaging* ***based on accurate information about risk***." {Emphasis added to show the new text}

17.16. Misunderstandings around this single paragraph appear to have led to suggestions that SPI-B somehow sought to orchestrate "a culture of fear" throughout the pandemic. This is wrong. Aside from being based on a misreading of the paragraph and a glossing-over of the context at the time, it also ignores the many quotations from our work and from the affiliated CORSAIR team's reports to the DHSC communications team that repeatedly argued for the exact opposite. Below, I list a selection of quotes from 14 papers that argued that fear and anxiety was to be avoided.

(1) "*Focussing on worry or risk perceptions in communication is not recommended*" {CORSAIR report to DHSC Communications team, 24 February 2020. JR/230 – INQ000196799}

(2) "*Recommendations not to focusing* {sic} *on worry or risk perceptions in communications still stand*" {CORSAIR report to DHSC Communications team, 26 February 2020. JR/231 – INQ000196800}

(3) "*Messages based solely on information, authority or fear/disgust will also likely be ineffective*" {SPI-B paper on Implementation and communications: Harnessing behavioural science to maintain social distancing, sent to the Cabinet Office 3 April 2022 {JR/138 – INQ000196805}

(4) "*Messaging should not focus on worry and perceived risk / severity of the coronavirus*" {CORSAIR report to DHSC Communications team, 3 April 2020. JR/232 – INQ000196807}

(5) "*Messaging should communicate information in a calm manner to prompt concern that can be reduced by taking appropriate action, rather than excessive anxiety. {…} Fear tends to increase perceived susceptibility and severity and can motivate behaviour change {…but} Messaging based on fear may not have sustained effects over time.*" {Implementing Behavioural Science to Increase Population Motivation to Adhere to Social Distancing 6 April 2020. JR/233 – INQ000196838}

(6) "*Messages which increase worry and perceived risk of coronavirus may not be effective in influencing intended, and consequently actual, self-isolation behaviour*" {CORSAIR report to SPI-B / SAGE. Self-reported adherence to social distancing measures, 7 April 2020. JR/234 – INQ000196809}

(7) "*All guidance developed must be extensively and iteratively tested and optimised through real-world implementation and feedback, taking particular care to consider and minimise the possible burden or anxiety that this may place on individuals*" {SPI-B paper on High connectivity situation outside the occupation / workplace context, 2 July 2020. JR/235 – INQ000197188}

(8) "*Raising awareness of risk from social contacts and the actions needed to reduce it has the potential to create feelings of anxiety, resentment or isolation. It is therefore essential to introduce risk management in a way that is sensitive, equitable, reassuring and supportive.*" {Reducing Transmission in High Connectivity Occupations, 11 June 2020. JR/236 – INQ000197151}

(9) "*Raising awareness of risk from social contacts and the actions needed to reduce it has the potential to create feelings of anxiety, resentment or isolation. It is therefore essential to introduce risk management in a way that is sensitive, equitable, reassuring and supportive.*" {Managing Infection Risk in High Risk Occupations, 15 June 2020. JR/237 – INQ000197162}

(10) "*Across all activities, planners should be aware of potential unintended consequences and seek to mitigate these. These unintended consequences include {…} increased fear e.g. of virus transmission*" {SPI-B Principles for the Development of Co-Production; 8 July 2020. JR/176 – INQ000197190}

(11) "*Fear inducing messages should be avoided...*" {SPI-B paper on Public health messaging for communities from different cultural backgrounds, 22 July 2020. JR/177 – INQ000197192}

(12) "*Communication should be timely, factual and convey clearly the level of danger using pre-established channels and social media as appropriate. Conveying factual information as quickly as possible will enhance trust and minimise 'infodemics', anxiety and fear.*" {SAGE Commission to SPI-B: Areas of Intervention ('Local Lockdown' Measures to Control Outbreaks of COVID During the National Release Phase. 29 July 2020. JR/238 – INQ000197195}

(13) "*Community champions can enable health workers to better understand and address people's fears*" {SPI-B paper on The role of community champion networks to increase engagement in the context of COVID-19: evidence and best practice. 22 October 2020. JR/218 – INQ000197209}

(14) "*Evidence-based messaging can counter the spread of misleading or inaccurate information and rumours, which are corrosive to communities and can instil fear.*" {SPI-B paper on Key evidence and advice on celebrations and observances during COVID-19, 5 November 2020. JR/239 – INQ000197215}

17.17. It is frustrating that not all of these papers were placed into the public domain in a timely manner. In particular, although I repeatedly asked for it to be made public, I did not secure permission from the secretariat for our 3 April 2020 paper on communication to be released until February 2022. Even then I needed to place it on our HPRU website rather than the SAGE website, for reasons I still do not understand. That paper stated, in its first bullet point, that fear-based messaging would be ineffective.

17.18. In fact, SPI-B spent its time trying to work out how to support members of the community, not scare them. We wrote entire papers about, for example:

(1) The importance of using positive messaging with the public {JR/102 – INQ000197210};

(2) The need to provide information, financial support, tangible support and emotional support to people in self-isolation {JR/203 – INQ000197202};

(3) Ways to co-produce messages and guidance with members of affected communities to ensure that they were involved in efforts to protect their health and wellbeing {JR/176 – INQ000197190};

(4) Strategies for ensuring that the challenges being faced by culturally diverse communities were addressed {JR/177 – INQ000197192};

(5) Ways to tackle challenges faced by workers who have high levels of contact with others {JR/236 – INQ000197151 & JR/237 – INQ000197162}.

17.19. Indeed, far from arguing that risks should be exaggerated to promote fear, we made it one of our guiding principles that what was needed above all else was clarity. For example, in March 2020, we said that:

(1) "*Following yesterday's decision by COBR, the two questions many members of the public have are: 1. "Will reducing my social contacts limit my risk" and 2. "Why is the Government not recommending specific social distancing measures when other countries are." Both are legitimate questions. With regards to the first, the answer from both modelling reports circulated on 12 March appears to be "yes." Government should therefore communicate this and help members of the public make rational decisions to manage their personal risk.*" {SPI-B Insights on Public Gatherings, 12 March 2020 JR/160 – INQ000196748}

(2) "*The behavioural science suggests openly explaining to the public where the greatest risks lie and what individuals can do to reduce their own risk and risk to others, even if this is ahead of measures announced by the Government – but SAGE recognises that taking individual measures may be more feasible for some than others. Greater transparency could enable personal agency, send useful signals about risk and build trust*" {SAGE minutes, 13 March 2020, point 4, JR/240 – INQ000197121}

(3) "*The group's overarching recommendation was a need for Government to provide clear advice that takes account of public concerns and suggests behaviours that reduce risk. Transparency will help people understand the risk and build trust. People should be treated with respect, capable of taking decisions for themselves and managing personal risk.*" {The Role of Behavioural Science in the Coronavirus Outbreak, 14 March 2020. JR/161 – INQ000196749}

17.20. We also cautioned against the use of fear in private conversations within Government. For example, when Dr Ben Warner from No10 emailed SPI-B on 7 January 2021 to ask whether rational messaging or emotive messaging might be best in encouraging people to adhere to guidance when in self-isolation, I responded that *"I would have concerns about ramping up fear. There is definitely scope to revisit the messaging that such people receive, but I would be concerned about messages focussing on death in*

people who are ill" {JR/42 – INQ000196932} while my co-chair of SPI-B, sor Yardley, replied that "*although emotive messaging can help to increase motivation, there is a wealth of evidence that fear-evoking messages only work if they are not too anxiety provoking (which prompts denial) and if they are accompanied immediately by advice on how to reduce the risk that people find credible and feasible."* {JR/45 – INQ000196937}. We advised that rational messaging was indeed the better option, and actively suggested the use of one evidence-based, educational intervention.

17.21. Similarly, when discussing proposed Hands Face Space campaign material in an email chain on 16 November 2020, a colleague from DHSC suggested showing explicit, impactful visuals of the consequences of non-adherence. I responded that: "*Consensus from the psychologists is 'be very careful with fear.' E.g. this is from Susan Michie (Director of Behaviour Change at UCL – world authority on this stuff): 'General rule is not to give fear appeals unless preceded with what you can do to prevent the action – and the fear appeal needs to be commensurate with how the person might be thinking – if too far removed or if actions not easy enough, may lead to defensive processing and a variety of cognitive processes to distance oneself from the threat … so I would stick to the positives and what can be achieved with lighter touch negative after empowering people to take action.' Our Prof of Social Marketing also felt it might not work well with people who are already very anxious about COVID – we need them to watch the ad too and need to be careful not to exacerbate anxiety.*" {JR/241 – INQ000197152}

18: Who, or what, caused fear during the pandemic

18.1. Multiple sources of data exist that show how fear, anxiety and worry changed over time during the pandemic. These provide important insights into what happened.

18.2. The DHSC surveys analysed as part of the CORSAIR study asked participants to report "*overall, how worried are you about coronavirus {or 'Wuhan coronavirus' in the first five surveys}?*" Responses were given on a 5-point scale from "extremely worried" to "not at all worried". Figure 4 shows the proportion of people who reported that they felt "very" or "extremely worried" at each time point. This graph was put together as part of a paper that was in preparation for publication by the CORSAIR team, until work on it halted while the Inquiry took precedence. We labelled it to make clear how changes in worry coincided with changes in major Government interventions, rates of transmission and the number of people dying. There are several points to note.

(1) Levels of worry among the general public increased dramatically in the run up to the first lockdown on 23 March 2020. They then fell once lockdown was put in place.

(2) They rose again in line with rising levels of infection in September and December 2020, though less dramatically. They fell as the second and third national lockdowns brought levels of infection under control.

(3) By the time of the increase in infection resulting from the Omicron variant, levels of public worry were no longer particularly responsive to changes in levels of infection. By this stage vaccination had been widely rolled-out.

18.3. In Figure 4, we also highlighted the start date of the two Government advertising campaigns that have attracted attention as the two most obvious examples of Government messaging that might increase levels of fear. These are the "If you go out" and "look them in the eyes" campaigns (see Figure 5 for examples of the campaign materials). The launch dates for these two campaigns were not associated with any obvious increase in levels of worry in the community.

18.4. We also analysed the CORSAIR data separately according to whether participants were over 60 years or not, and whether they were in a clinically at-risk group or not. The figures are shown in Annex 2. Those aged 60 years and over tended to be less worried than younger groups once the vaccination campaign started to be rolled out (from Spring 2021 onwards). It will be remembered that the older age group had priority access to vaccination. Those in clinical at-risk groups reported higher levels of worry throughout the pandemic. Again, the launch dates of the two advertising campaigns do not seem to have particularly affected worry in these subgroups.

18.5. For the general population as a whole, a similar pattern can be seen in the Cabinet Office polling data which employed a different polling company {JR/242 – INQ000197153}. In these data, worry peaked on 23 March 2020 and then declined steadily, before rising again in the run-up to the second and third national lockdowns before declining once again. The two advertising campaigns do not seem to be associated with any noticeable increase in levels of worry.

18.6. A third source of data is a series of polls conducted by YouGov across multiple countries. These asked respondents to state the extent to which they were scared that they will contract COVID-19. The data show that fear fluctuated in different countries at different times, making comparisons difficult, but the UK seems to be at the upper end of the distribution for Europe at some time points (Figure 6). Within the UK data,

a dramatic increase can be seen up to the 27 March 2020 datapoint (i.e. around the time of the first lockdown), after which levels declined. They increased again from around 15 September 2020 to 29 January 2021 (around the time of the second lockdown and spread of the Alpha variant) before then declining. Again, it is difficult to spot any substantial changes in emotion that occur following the launch of the two Government advertising campaigns.

18.7. Broadly similar patterns can also be seen in polling data from other companies such as Ipsos MORI and Savanta.

18.8. The data discussed so far ask about whether people are worried or scared specifically about COVID-19. A different perspective can be found in another dataset from YouGov that asks around 2,000 respondents to report on their mood in the past week, regardless of reason, and that has been collecting data weekly since 2019. This shows (Figure 7) that the proportion of people who reported being scared spiked in the week preceding the 23 March 2020 lockdown and then fell dramatically once lockdown had been imposed, with further small increases in September-November 2020 and 10 January 2021 that then returned to the baseline. A fourth spike is also visible that seems to be linked to the invasion of Ukraine by Russia. These YouGov data are also interesting because it is possible to split the file according to whether respondents were 18-24 (who were generally at lower risk during the pandemic) and 65+ (generally at higher risk). I have shown the charts with the data split in this way in Annex 3. This shows that, first, young adults tended to have higher baseline levels of reporting feeling scared even before the pandemic began and, second, partly because of this, changes in reporting feeling scared linked to the run-up to lockdowns are more obvious in older adults.

18.9. I am aware that some have said that one of the worst mistakes of the pandemic was the level of fear conveyed to the public by the Government. As discussed above, there are multiple sources of data showing how worry and feeling scared changed in the UK population during the pandemic. I believe these tell us that the main causes of fear were changes in the pandemic itself. Increases in fear appeared to reflect alarm about increasing rates of infection. Once lockdowns were put in place and infection rates fell, fear fell. The data also tell us that the impact of changing infection rates declined over time. I can only speculate as to why this is, but I suspect that perceptions of immunity played a role given how many people believed they had already caught COVID-19 or had been vaccinated. This would correspond with the lower rates of worry seen in

people aged 65 and over after the launch of the vaccination campaign in December 2020. As to whether fear about changing levels of infection was conveyed to the public by the Government, I do not know whether, for example, reporting reasonable worst case scenario data in press conferences had any particular impact on public concerns. However, I can say that, although discussions of fear in the UK context are usually illustrated with pictures of the "if you go out" and "look them in the eyes" campaigns, it is difficult to spot any impact of the launch of these campaigns in the datasets that I am aware of.

18.10. I do not know what discussions took place in Government about what style of messaging to use when. This varied from calm, clear explanations of how disease is transmitted (for example the 'Hands, Face, Space' campaign), to the more dramatic imagery in the 'if you go out' and 'look them in the eyes' campaigns, to a wide range of adverts and messages produced around test and trace, social distancing and other interventions.

18.11. I was involved in a small number of the campaigns, including discussions around the very early adverts in February / March 2020 about respiratory and hand hygiene, and a later 'Hand, Face, Space' campaign intended to illustrate the mechanisms through which transmission can occur. But I saw the material for most campaigns (including the 'if you go out' and 'look them in the eyes' campaigns) at the same time as everyone else in the public.

18.12. In terms of how specific campaigns, such as the 'if you go out' and 'look them in the eyes' campaigns, were developed, my understanding is that the Cabinet Office communications teams were constantly pulling together multiple sources of information and working closely with selected advertising agencies to develop campaigns. One account of how this worked {JR/243 – INQ000197156} describes how executives from Mullen Lowe (a key advertising agency) worked from within the Cabinet Office alongside multiple other agencies. "*Sitting close with the client, in essence, we were writing the briefs together {…} They'd go, 'so there's this thing we need to communicate' and we'd go okay how best can we do that. Then we would battle it out together. {…} Working with qualitative research agency Britain Thinks, she explains it would pose online discussion groups throughout the week, "building up an excellent understanding of public attitudes towards the virus. It's very quick to sense when things are changing and how." The team also received quantitative research through Kantar, which had a tracker on public mood* {Note: this is a series of polling

separate to that analysed by CORSAIR}, *that would raise an alert if there was any whiff that the public was over it, so they could adapt their comms accordingly. {…} With a production area nestled right beside them, Trudy Waldron, MullenLowe Group UK's director of integrated production explains how the team was able to respond quickly to the brief. "From presenting production partner edits to signing off budgets, it was a very swift and fluid process - way more than a normal production timeline," she shares.*" This article describes a *"breakthrough moment" when the team realized "people's propensity to comply with the restrictions correlated with the extent to which they regarded covid as a risk. The issue was, people began doubting the seriousness of the situation, questioning whether hospitals were really full, spurting misinformation that everything was a hoax, that everything was fine."* The article also notes that "*With 'Look Into My Eyes' we were deliberately more empathetic, acknowledging that this is a hard thing that we're asking people to do – specifically targeted at those who thought the risk was exaggerated.*" A full understanding of what informed specific aspects of messaging, including any ethical considerations, would require greater insight into the work of these Cabinet Office teams, their agencies and the qualitative and quantitative data that they were drawing on than I have access to.

18.13. Based solely on the limited information I have from the selection of WhatsApp messages that the Telegraph have placed in the public domain, I would say that there was sometimes a disconnect between the advice produced by SPI-B and the conversations that were had at a high level. For example, on 23 December 2020, SPI-B gave the following advice about messaging in relation to the new variant that had begun to circulate {JR/244 – INQ000197226}:

(1) *"Provide positive feedback about a) the great efforts people are making to control the virus, b) the success of these efforts in helping to reduce infection rates and c) the need to now increase these efforts to sufficiently control the new variant."*

(2) *"When introducing any changes to guidance for infection control it is crucial to provide a credible rationale for new guidance and changes, and the new guidance should be precise and consistent."*

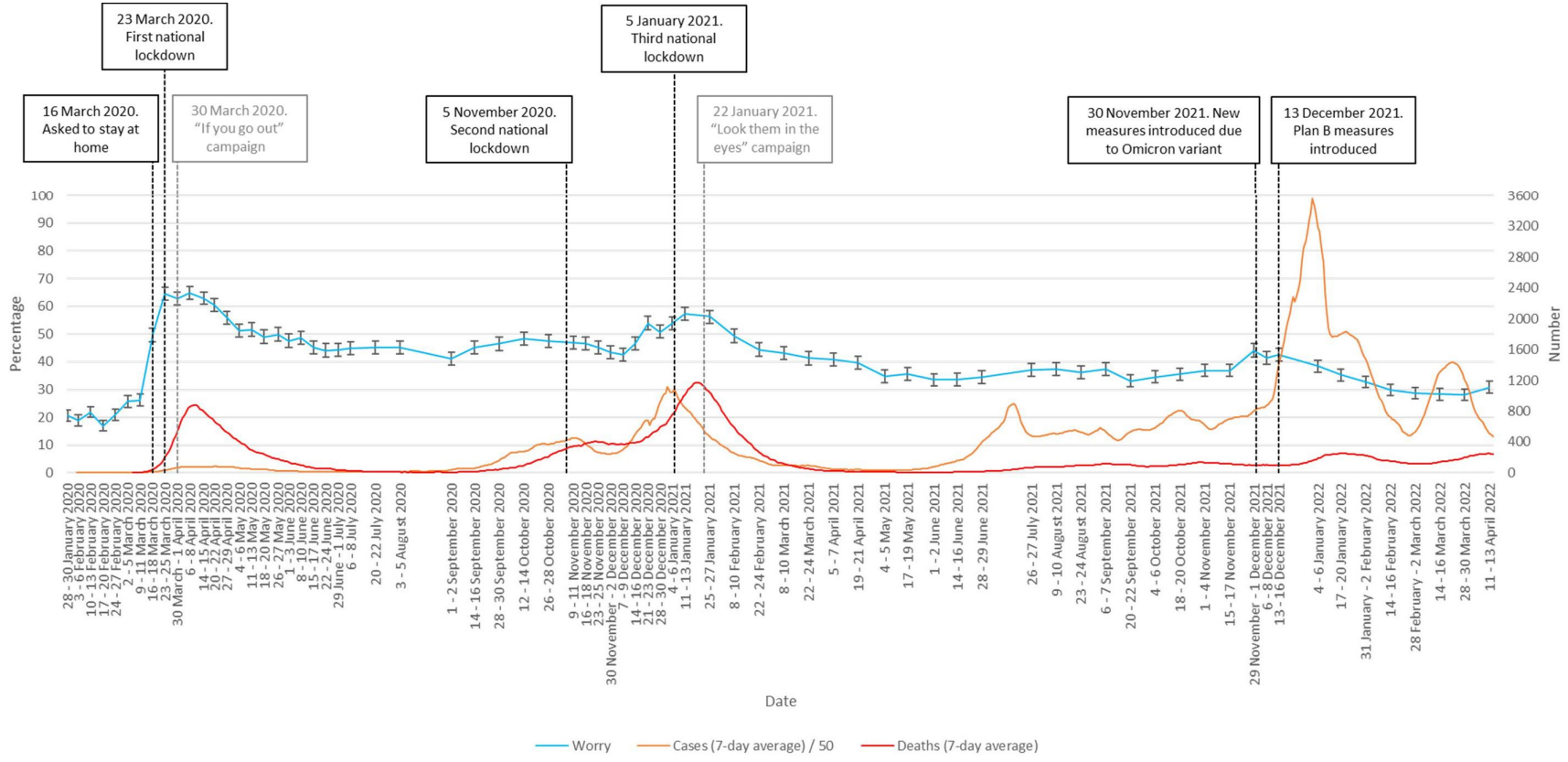
(3) *"Help members of the public to identify situations where they find it difficult to avoid risk behaviour and work with them to create acceptable solutions."*

(4) *"Target more intensive information and practical support for adherence to the specific behaviours, settings and populations that need it."*

(5) *"Provide appropriate communications and support for people from communities with different cultural backgrounds."*

18.14. According to the media reporting that I have seen, it appears that two weeks later, on 10 January 2021, the Cabinet Secretary messaged the Health Secretary to suggest "*ramping up messaging – the fear/guilt factor vital*." {JR/245 – INQ000197157}. It is hard to reconcile the Cabinet Secretary's stance in this message with the advice given by SPI-B. However, I note again that I am only aware of this exchange because of media reporting and I do not know the full context.

Figure 4: Percentage of people who were "very" or "extremely" worried between January 2020 and April 2022. Error bars are 95% confidence intervals. Case numbers before June 2020 and in April 2022 are an underestimate as widespread testing was not implemented at this time. Black vertical lines denote major Government interventions. Grey vertical lines denote the launch of advertising campaigns.



79341512.2

Figure 5: "If you go out" and "Look them in the eyes" Government advertising campaign materials.

Figure 6: Rates of fear in European countries: Screenshot of YouGov data take from https://yougov.co.uk/topics/international/articles-reports/2020/03/17/fear-catching-covid-19 4 April 2022

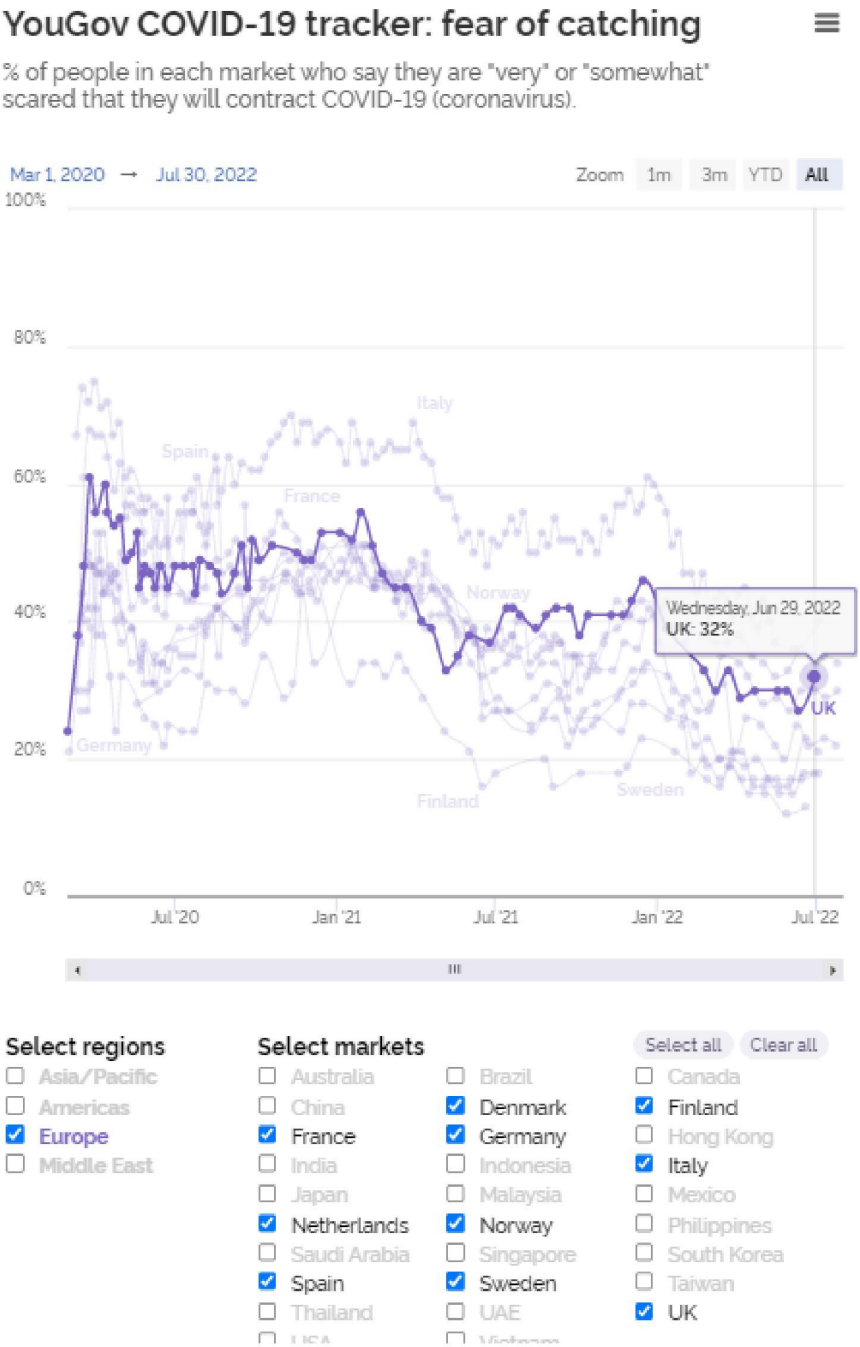
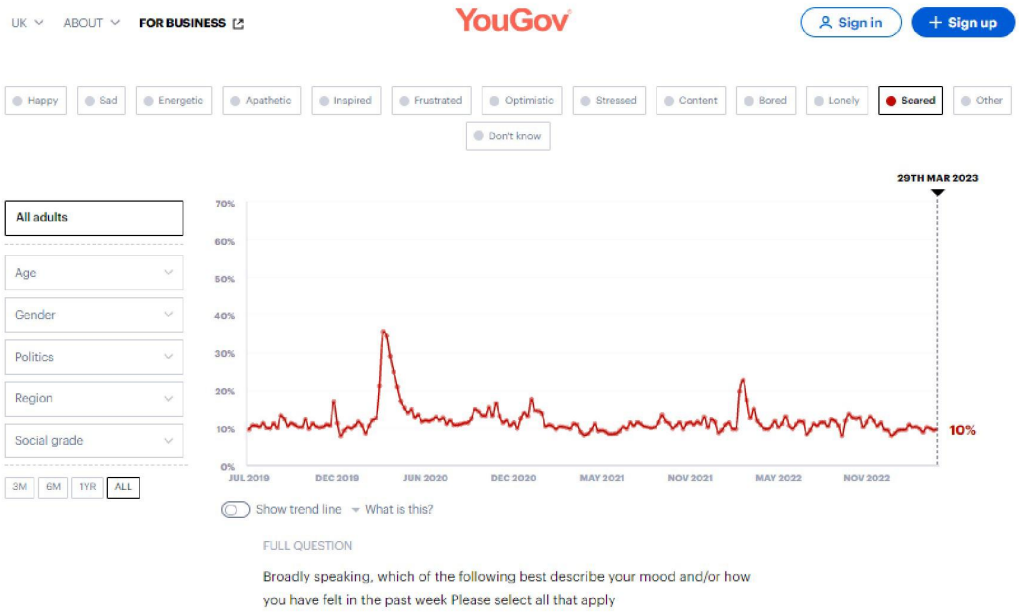


Figure 7: Data from "Britain's mood, measured weekly" by YouGov. Taken from https://yougov.co.uk/topics/science/trackers/britains-mood-measured-weekly 4 April 2022



19: Ethics

19.1. SP-B were aware that policy makers had access to an ethical advisory group (the Moral and Ethical Advisory Group, MEAG) which worked on issues relating to pandemics. We had no contact with MEAG, though did occasionally ask for updates on their work, for example around immunity passports {JR/246 – INQ000197158}.

19.2. Working through ethical challenges during a crisis is difficult. Is it ethical to confine people to their homes? What if tens or hundreds of thousands of lives depend on it? How should the preferences of those who are at risk, or the wider public, be factored into this? I have had no formal training as an ethicist. My stance is that resolving questions such as this during a time of national crisis is the job of our elected representatives. It is they who must decide what is in line with our values as a nation. Particularly given that they have access to detailed ethical advice from an appropriately constituted expert advisory group, I believe the best role for SAGE and its subgroups is not to attempt to second guess this by taking evidence-based options off the table before they are seen by the minister. In my opinion, where there is valid debate as to how ethical an option is, it is for the minister, not the scientist, to make that decision. The terms of reference of SPI-B were in line with this and say that "*SPI-B is a science advisory group only. Questions of the proportionality {…} are outside of the group's remit*."

19.3. Participants within SPI-B operated under the ethical frameworks of their own professional bodies or employers. I believe that the participants on SPI-B provided the Government with the best scientific advice that they could and satisfied their professional ethical obligations. Nonetheless, a complaint about the psychologists within SPI-B was considered by the Ethics Committee of the British Psychological Society in January 2021. It was dismissed. The Chair of the Committee noted that "*the contributions of psychologists in responding to the pandemic were entirely consistent with the BPS Code of Ethics and Conduct, demonstrating social responsibility and the competent and responsible employment of psychological expertise*." {JR/247 – INQ000197159}.

20: Communication of the variation of risk

20.1. As noted in the 22 March 2020 options paper, SPI-B believed that people required "*a good understanding of the risk*" that they faced. SPI-B and SAGE also advised, many

times, that what was needed in communication with the public was clarity {JR/214 – INQ000196761}.

20.2. I have already noted in paragraph 17.21 that SPI-B said, for example, that "*the behavioural science suggests openly explaining to the public where the greatest risks lie and what individuals can do to reduce their own risk.*"

20.3. The question as to whether people were made sufficiently aware by the Government of the large variation of risk across the public is partly an empirical one. In paragraph 18, I discussed whether levels of worry differed between older and younger people, or between people who were or were not in clinically at-risk groups. However, I also noted that even fit and healthy people can justifiably be worried about the pandemic if it means that their ability to earn an income will be harmed, or if self-isolation means that they will miss out on social activities that they value. Questions asking whether people feel at risk are also misleading in this regard, given that someone who is, for example, clinically extremely vulnerable might say that they do not feel at risk, on the basis that they are following guidance to shield and therefore they are not coming into contact with anyone who might pass the virus on to them. A better question is to ask directly whether a person believes that COVID-19 would be a serious illness for them, although as noted, even this conflates severity in terms of the physiological effects of the illness with severity in terms of economic loss or inability to engage in valued social activity.

20.4. In the CORSAIR dataset, one question asked participants to report whether they believed that COVID-19 would be a serious illness for them. In an analysis that we provided to DHSC on 17 March 2020 {JR/248 – INQ000197160}, based on data collected between 09 to 11 March 2020, we found that respondents aged 65 years and older were more likely than younger participants to believe that COVID-19 would be a serious illness for them (62.9% agreed or strongly agreed vs 41.4%). We also found that people with a chronic illness were more likely than those without to believe that COVID-19 would be a serious illness (74.5% vs 34.2%). This suggests that the public were aware of the large variation in risk across the population.

20.5. In preparing this statement, I asked a member of my team to plot responses to that CORSAIR question over time, to show how perceptions of the severity of COVID-19 changed in a) people who were in clinical at risk groups, b) people not clinically at risk, but 65 years or older, and c) people not clinically at risk, and 64yrs or younger. The graph is shown in Annex 4. This illustrates that these differences in perceived severity persisted over time.

20.6. The graph in Annex 4 also illustrates that perceived severity in people who were not in a clinical at-risk group was declining from February 2020 to the 9-11 March 2020 data collection point but had increased again by 23-25 March 2020. This was particularly true for the older age group. Whether this increase was due to a change in media reporting around the lockdown, a shift in tone from the Government, or something else is not clear.

20.7. I would caution that perceptions of risk are not determined by Government communications alone. For example, among other factors that have been proposed as being associated with higher risk perceptions in general during the pandemic are female gender, higher level of education, exposure to media reporting, specific political orientations, having a more pessimistic personality and direct experience of COVID-19 {JR/246 – INQ000197158}. Assuming that Government messaging alone determines whether people feel that COVID-19 would be a severe illness for them is simplistic. This makes it challenging to say whether people were made sufficiently aware by the Government of the large variation of risk across the public. Given the range of other factors that determine whether someone feels at risk, what would the rates of perceived risk look like in a public that had received sufficient information? Is the 34.2% of people without a chronic medical condition who felt that COVID-19 would be a severe illness for them (Paragraph 20.4) low, given the specific context, or high? It is certainly much lower than the equivalent rate for people with a chronic medical condition (74.5%), but whether it is *sufficiently* low, and whether Government messaging alone could have reduced it still further, is not something I can provide an easy answer to.

21: Nudge theory

21.1. I have been asked to provide a summary of 'nudge theory' and its ethical implications. In the section below, I will set out my understanding of this issue. However, I would preface this by stating that this is of limited relevance to SPI-B, which was not a 'nudge unit.' Describing it in that way would be a misrepresentation of the very broad range of approaches that SPI-B brought to bear, most of which have nothing to do with 'nudges.'

21.2. 'Nudging' is a type of behavioural science intervention in which people are guided towards a particular behaviour while being free not to engage in that behaviour if they do not wish to. A classic example is pension auto-enrolment. Within the UK, many people are enrolled into a work-place pension by default because the Government

views this as being in their best interests. However, it is not compulsory and people can opt-out should they wish to. This replaces the older system in which people were not enrolled by default and had to opt-in if they wished to. The change has resulted in more people saving for their retirement, particularly among groups who traditionally failed to take advantage of pension savings {JR/249 – INQ000197161}.

21.3. Nudges can involve "choice architecture," which involves restructuring something in the environment to make a given behaviour more likely (for example, placing sugary or non-sugary drinks at eye-level on a supermarket shelf). They can also involve information, such as providing information that most people choose to file their tax return on-line in the hope that this will encourage others to do likewise.

21.4. While some people dislike nudges because they feel that they chip away at their agency, in practice nudges are intended to preserve agency, particularly in contrast to other behaviour change techniques such as legislation. Someone who wants to file their tax return on paper, select the sugary drink and opt-out of their workplace pension is still able to do so. Nudges are therefore a form of behaviour change that does not involve coercion.

21.5. The question of whether nudges are 'manipulative' in that they reduce autonomy has caused a degree of academic debate, involving some lengthy philosophical arguments. I cannot hope to do justice to it here and would not profess to be an expert on these matters in any case. However, a pragmatic account is available in a paper by Nys and Engelen {JR/250 – INQ000197163}. One point these philosophers make is that, where people have genuinely strong opinions about a given topic, nudges are unlikely to have much influence on them. It seems unlikely, for example, that people who have a strong view that they do not wish to wear a mask would be convinced to wear one simply because an open box is placed at the entrance to a shop. The real influence is on the majority of people who are not particularly bothered with these debates but will put on a mask if it's there. The autonomy of those people who are keen to have their autonomy preserved, *is* preserved. A second argument concerns the nature of consent. Governments are elected to govern many aspects of our behaviour, particularly when those behaviours could harm others. Speed limits in towns are enforced by the police in order protect drivers, but also to protect pedestrians. A Government nudging people towards behaviours that protect the health of others seems a workable compromise for a Government keen to fulfil its duty to protect its citizens, while also preserving autonomy for those citizens who have strong

views on the matter. As Nys and Engelen noted: "*sometimes the stakes are so high and the alternatives so inadequate that nudging could be justified on objective grounds. So in addition to recognising nudging as one of the many (and among the least intrusive) public health policies that policy-makers can legitimately employ, one can add that, in urgent and important cases like the obesity pandemic, we should err on the side caution, that is in favour of health-promoting measures.*"

21.6. I tend to agree with the analysis by Nys and Engelen. I believe that nudging has its place, if it is demonstrated to be effective, and that it can be preferable to other options such as compulsion. I am also happy to accept that others take a different view of this. For example, Professor Stephen Reicher who is one of my colleagues from SPI-B has described nudging as "*concerned with manipulating people without their awareness… the emphasis is on altering the 'choice architecture' to make them do the easy thing… it suggests people can't look after themselves and need an authority to look after them.*" {JR/251 – INQ000197164} In practice, however, this debate is moot. As Professor Reicher's article goes on to point out, SPI-B was not SAGE's nudge unit.

21.7. Instead of nudging, SPI-B's work focussed on providing support to people to help them to engage with the measures that were openly recommended by public health experts. To illustrate the point that 'nudge unit' is a poor description for SPI-B, I will give ten illustrative examples of important papers that we wrote, and that do not rely on nudging.

(1) Well-being and household connection - the behavioural considerations of bubbles {JR/137 – INQ000197107}. This paper provides a detailed analysis of household composition and discusses how best to structure a "bubbles" policy to ensure it benefits those who need it most

(2) Reducing transmission in high connectivity occupations {JR/236 – INQ000197151}. This paper notes that people in certain roles are placed more at risk by nature of their work and that these people and everyone they meet need to take extra care to protect each other. Solutions suggested were education, co-creating guidance, redesigning shared spaces to minimise the need for contact, using existing health and safety regulation and enforcement, and monitoring progress. None of these are nudges.

(3) Key evidence and advice on celebrations and observances during COVID-19 {JR/239 – INQ000197215}. This makes the points that: major celebrations will lead to increased transmission; adherence to current guidance is essential; it is

better to focus on behaviours common to all events as opposed to issuing advice separately for Christmas, Eid and so on; finding alternative ways for people to engage safely in events requires co-creation; differential treatment of major events would undermine legitimacy and engender resentment; specific guidance is needed about visitors to the home; early communication that celebrations will need to be different this year was important; and communication about why low-risk behaviours are still a problem when millions of people engage with them would help.

(4) How important is symptom recognition in leading people to seek a test for COVID-19? {JR/252 – INQ000197220} This paper noted evidence that many people in the community apparently could not identify the symptoms of COVID-19 that necessitated taking a test and self-isolating. It urged clearer messaging about what these symptoms are; explaining the rationale for acting on symptoms; tackling barriers to seeking a test such as low knowledge about how to request one, inability to travel to a testing site, and low trust in data protection issues; focussing on groups with specific needs in this area including people from minoritised ethnic groups, parents of young children and people with chronic medical conditions; and tackling fears of stigma and discrimination if a test result is positive.

(5) Health status certification in relation to COVID-19 – behavioural and social consideration {JR/253 – INQ000197218}. This paper analysed a proposed policy that COVID-19 certificates could be used to allow some people greater economic and social freedoms. It flagged the extremely limited evidence for these issues and described the concerns of the group about the possible behavioural side-effects of such a policy, including people seeking deliberate infection, the widening of inequalities, and the potential for protests. We called for: equality and equity of access to certificates; clear and open communication about the policy; and ensuring that no group would be disadvantaged by the policy, particularly in terms of access to income.

(6) SPI-B consensus on reintroduction of measures and their impact on rate of infection {JR/254 – INQ000197187}. This paper summarises key behavioural science points for the Government to consider if infection rates rise. They were that: behaviour change might precede restrictions being imposed; voluntary behaviour change might not be sudden; trust in government and perceived risk

had declined, while discontent and resistance had risen; issues of equity were now more important than ever; basic knowledge was still low for many people.

(7) Public health messaging for communities from different cultural backgrounds {JR/177 – INQ000197192}. The paper argues for risk communication that is culturally appropriate for BAME communities. It focusses on the need for co-production, involvement of local authorities, messages tailored to reflect local realities, linking messages to the social identities of affected communities, and avoiding fear-inducing messages.

(8) Principles for co-production of guidance relating to the control of COVID-19 {JR/176 – INQ000197190}. Having argued multiple times for the need for co-production, in this paper the group attempted to re-emphasise the point by producing a short introductory 'how-to' guide. It points to the need for guidance to work with communities to unearth insights that might not be found via a more 'top-down' approach, to tackle the relevant aspects of policy including both development and dissemination of guidance, and support procedural justice and equity.

(9) The impact of financial and other targeted support on rates of self-isolation or quarantine {JR/203 – INQ000197202}. Noting evidence that rates of self-isolation were low, this paper argued that rates would likely be improved by providing financial, tangible and emotional support as well as better information.

(10) The role of community champion networks to increase engagement in the context of COVID-19; Evidence and best practice. {JR/218 – INQ000197209} This paper describes the key components of a successful community champions programme as: ensuring buy-in from national and local Government; providing resourcing; ensure community champions reflect their community; ensure the scheme is collaborative, not hierarchical; provide training to champions; balance standardisation of messages with trusting the champions with a degree of autonomy; providing a virtual notice board to allow champions to talk to each other; and evaluating the programme.

21.8. In short, describing the work of SPI-B as "nudging" is not accurate.

22: Government messaging

22.1. During a crisis, the most important outcomes from official messages are behavioural. Saving lives often depends on telling people what they should be doing. Members of the public understand this: in a pre-pandemic systematic review of the literature on crisis communication conducted by my team, finding out what to do was one of the top priorities members of the public had during a crisis {JR/141 – INQ000197097}. Behavioural science can help by explaining what features of a message make it more likely that people will listen to it, understand it, and engage with the behaviour. For example, do people understand who is at risk, do they know why specific behaviours are being recommended, do they have concerns about the side-effects or costs associated with those behaviours, are there ways to make sure the message is trusted, what should we do about mis- or disinformation that is circulating online, and so on.

22.2. Because communication plays an important role in guiding behaviour during a crisis, many of SPI-B's papers contain some form of recommendation about communication. In an early paper that was sent directly to the Cabinet Office {JR/168 – INQ000196772} and published in the academic peer-reviewed literature {JR/139 – INQ000197095}, the group set out the basic principles that it would then return to in one form or another in many future papers. These are set out in paragraph 4.6 and focussed on issues based around clarity, co-production, using messages about protecting each other and standing together, avoiding fear, disgust or authoritarian messages, and using rewards and enablement more than punishment or castigation.

22.3. The group understood that such high-level principles were easy to say, but harder to put into practice. As such we also developed a "communications subgroup" to work more on this issue. This produced a theoretical paper that discussed the various theories within behavioural science that applied to communication {JR/233 – INQ000196838}, an offer of help for communications teams within Government that the secretariat circulated within Whitehall {JR/255 – INQ000196827}, a checklist that was essentially an abbreviated version of our original paper {JR/256 – INQ000197129} and a set of examples as to how brief slogans could be developed that met our criteria {JR/119 – INQ000197140}.

22.4. Some participants were also directly involved in specific communication campaigns, in their role as individual academics. In February 2020, Professor Val Curtis and I provided advice to DHSC and, I think, PHE on early messages about public health advice. We highlighted the need for posters to be visually different to the usual GP

surgery waiting room style poster to make them stand out and the need for the messages to be clear as to what was required. I also advised on the Hands, Face, Space campaign that was intended to educate the public about the underlying rationale for the behaviours that were being recommended. Following concern that people who were receiving vaccination were letting down their guard before the vaccine had taken effect, Professor Susan Michie advised NHS England about a video that I believe was played in vaccination centres and reminded people that it would take two or three weeks for any protection to kick in. Other participants may have been involved in other specific campaigns.

22.5. Aside from our involvement as individuals, I do not think the group itself had any particular involvement with specific campaigns. Issues around the nature of our involvement with messaging and communication came to a head on 10 May 2020 in a series of emails, discussion with the Government Communication Service and the involvement of Sir Patrick Vallance. At the time, the official Government slogan had just changed to "Stay alert, control the virus, save lives." Several members of the group felt this messaging was poor and the intention misguided. This triggered an email chain in which these comments were made plain and some participants asked me to write a letter of protest. In short, some in the group felt their advice had not been listened to {JR/257 – INQ000197165}. This chain caused a stir within Government. I was contacted by Professor David Halpern who wanted to put me in touch with Mr Aiken to discuss it (see paragraph 3.30). I had a very useful email conversation with Dr Laura de Molière from the Government Communication Service {JR/258 – INQ000197167} who advised that:

"*The messages in this instance are kept so elusive by a small group of mainly No10 advisers – these are agencies that have won their political campaigns and are now supporting this one too. My team was never consulted either and as soon as I heard the message I flagged our concerns which mirror those of the group- only to be told it was too late now (and "it tested well" which often means a shut down of discussion of any risks!). I think bottom line isn't they won't change the message now. Flagging concern is probably not wrong but I think it would be better to explore how to work more with them next time. And I am so sorry that despite being the behavioural scientists inside the government communications service we don't have a handle on this either. It's so often partially political and in this case I was also told they wanted to keep it deliberately small so that there's not too many cooks which is also a cultural issue.*"

22.6. She also went on to discuss the qualitative research that apparently supported the use of the slogan {JR/258 – INQ000197167}. I also received a call from Sir Patrick Vallance and I can see I reported back to my co-Chairs that "*that call from Patrick was about the email chain to express concern about SAGE getting drawn into a govt operational move and losing reputation as a result.*" {JR/259 – INQ000197166}. In the email threads, I tried to make clear the dividing line between SPI-B advising on the scientific principles around communication and developing the messages themselves. I said that:

"*I do think we need to be careful about where our remit lies. There is a difference between what 'SPI-B' does (which is solely to respond to requests from SAGE for behavioural science), and what we as independent academics are interested in. So while I agree that the slogan is pretty banal, SPI-B is not responsible (and does not want to be responsible) for all behavioural science across government. We have put an offer out there to help on comms if depts are interested, but it is just an offer, not a requirement.*" {JR/118 – INQ000197076}

22.7. I also said that "Govt also gets its comms advice from dozens of other groups and can pick and choose." {JR/257 – INQ000197165}

22.8. We had a meeting on 11 May 2020 about these issues, which Sir Patrick Vallance attended. From the note of the meeting, I see that:

"*SPI-B discussed the new government slogan and concerns over the lack of specific and clear advice. The remit of SPI-B with regards to government communications was discussed, and the positive impact that SPI-B advice has had on informing policy development. It was noted that central government comms are by nature political but it is also critically important that the delivery of policy is informed by science. SPI-B advised that lessons could be learned in the development of public communication strategies informed by behavioural science and that there would be benefits in reiterating the SPI-B principles for effective communications.*"

22.9. Following this, SPI-B prepared a paper on how to develop future messages, and I specifically asked Dr de Molière to stay involved and make sure the paper was something that would be useful for Government, and steer it away from general principles given her advice that "*On the principles, communicators zone out so quickly because they know a lot of it in theory*" {JR/260 – INQ000197168}.

22.10. In practice, in an email exchange with Dr de Molière about the resulting paper she advised me that, while our advice around slogans was sound, she did not think anyone

would read it {JR/122 – INQ000197079, JR/119 – INQ000197140}. I assume this is just because they were too busy.

22.11. I do not recall getting any feedback on the paper from the Government Communication Service. And, while the secretariat circulated our offer of hands-on help to communications teams, the group was not approached with any requests for help regarding any specific campaign or slogan.

22.12. However, the Cabinet Office communications team did seek our advice on some specific issues that would inform their campaigns at a more fundamental level. For example, in September 2020, I can see that SPI-B were discussing potential commissions with the Cabinet Office communications team around general messaging approaches for students and young people; how to use messaging to encourage adherence while allowing the public to engage with upcoming celebrations; whether messaging and enforcement approaches might drive habit formation and maintenance of behaviours; how to use messaging to acknowledge the sacrifices made by young people during the pandemic; what the right balance was between community-led and paid for campaign activity; and how important was symptom recognition in driving engagement with NHS Test and Trace {JR/261 – INQ000197169}.

22.13. Reports from SPI-B were only one input that central Government used to inform its messaging. For example, I am aware that they also commissioned many focus groups and a large volume of polling that SPI-B were not regularly sighted on, and worked closely with several advertising agencies.

22.14. Some of the messaging produced by the Government was excellent. The 'Hands, Face, Space' campaign was clear, engaging and explained the basic concepts so that people could then apply what they had learned across a range of situations to reduce transmission, in a way that is not possible to achieve by simply stating a list of rules. The 'stay at home, save lives, protect the NHS' slogan was clever. It neatly cut through reams of guidance to tell people what to do, why, and linked it to a much-loved national symbol. Much messaging from NHS Test and Trace was also clear and, crucially, responsive to evidence. For example, after evidence suggested that people were failing to take a test because their symptoms were 'only mild,' messaging began to reinforce the point that your mild symptoms could result in serious illness for someone else.

22.15. Other aspects of messaging were confusing. The COVID alert system was obviously intended as a communication device but seemed to have no practical implications for

members of the public. The 'stay alert, control the virus, save lives' slogan was an empty message, containing no information on what people were meant to do. Some NHS Test and Trace messaging assumed knowledge that was not necessarily there, such as instructing people to self-isolate if they had symptoms, but without explaining what symptoms to look out for.

22.16. In thinking back over Government messaging, I find it hard to come to any opinion as to if and how SPI-B's advice was taken on board, what assumptions about human behaviour lay beneath the messaging, or how effective it was. There was so much messaging that it is hard to form a single view. Campaigns came and went, launched by local councils, NHS trusts, national Government, the devolved administrations, DHSC, UKHSA, Cabinet Office, charity groups and more. This rightly used every communication channel including, importantly, the Community Champions network to ensure messages were disseminated to vulnerable and minoritized groups. The campaigns reflected the Government's priorities at the time, which could change rapidly. This leads me to my key criticism of messaging during the pandemic. While individual campaigns might have been effective or ineffective, the overall impact of all the campaigns together was confusing and lacked the clarity that SPI-B had recommended.

22.17. This is not the fault of the communications teams or the advertising agencies. Rather, confusion in public health messaging was itself a result of confusion in the underlying policies. These changed frequently, as the Government attempted to maximise the economic and social freedoms people had at each stage of the pandemic. I will not attempt to summarise the changes in rules about going to work, meeting other people, tiers, local lockdowns, 2m vs 1m+, face coverings, self-isolation periods, rules of 6 and so on. But the rapidly changing nature of policies and constant tweaking of the system left people confused as to what they were meant to be doing. Focus groups at the time conducted by Dr Simon Williams and colleagues in Swansea University found participants reporting that they were "*lost*," "*confused*" and that it was "*impossible to keep up with the rules*." {JR/205 – INQ000197136} As one said "*It's hard to keep up with all this information. I've come to the decision where I am going through day-by-day but placing less attention on whatever the government is saying… I'm not as concerned about following the measures as seriously as I should have done*." Another comment was telling about the confusion people were left in: "*the rules are there to help, and I try to abide by them, but it's just gone to the extreme now where, if I asked the three of you now, what the rules are, we would probably all say something*

different." Polling at the time pointed in the same direction. A study by Dr Daisy Fancourt and colleagues at University College London at the start of 2022 asked participants whether they felt they understood the rules. Only 4 in 10 claimed to understand the rules fully or near fully. One in ten people said they did not understand the rules at all {JR/262 – INQ000197170}. Polling by the King's College London Policy Institute found that the percentage of people who found the communication and advice from the UK government helpful fell by 21 points between 1-3 April 2020 and 20-22 May 2020 {JR/263 – INQ000197171}.

22.18. A particular worry is that, in the midst of this messaging around constant changes to the rules, key issues were poorly understood by the public. For example, polling consistently showed that a surprising number of people could not name the key symptoms of COVID-19 that necessitated them taking a test or self-isolating. I found this so troubling that I wrote a SPI-B paper focussed on this single issue {JR/252 – INQ000197220}. Similarly, work by the CORSAIR team found that nearly 1 in 4 people either did not know, or disagreed, that opening windows to improve ventilation was an effective way to prevent the spread of COVID-19 {JR/264 – INQ000197172}. This apparent lack of understanding was flagged by SPI-B in our reports. For example, on 24 June 2020 {JR/254 – INQ000197187}, one of the six key points we raised with Government was that "*some people still lack a basic understanding of COVID-19 {…} Many people are confused by rapidly changing government guidance and do not fully understand the rationale for it (17), which makes it less likely that they will be intrinsically motivated to undertake and sufficiently skilled in implementing effective infection control (18).*" We urged Government to pre-empt this issue should a reimposition of restrictions be needed. We said that the Government should "*develop and widely disseminate a variety of resources that can promote a better understanding of symptoms and mechanisms of transmission of COVID-19. This will help the public understand how to implement hygiene behaviours now that will prevent the resurgence of disease.*" In fairness, messaging about the basic principles of disease transmission did later appear, with examples such as better NHS Test and Trace messaging and the 'Hands, Face, Space' campaign. However, I do worry that these messages were crowded out in the noise relating to changing policies. I do agree with the Institute of Government's assessment that Government "*fail{ed} to drive home key messages*" about how to prevent disease transmission.

22.19. Conflict between underlying priorities also explains some of the confusion that surrounded issues such as the 'Freedom Day' slogan and the 'Eat Out to Help Out'

policy. Clearly, these were both targeted at increasing economic and social activity. SPI-B was not consulted on either, not unreasonably. Planning for these campaigns cannot really be described as emergencies requiring the input of a group who had volunteered to provide rapid advice in a crisis. I am not an economist and cannot comment on whether these activities met their economic aims. From a narrow behavioural science perspective, Eat Out to Help Out was cleverly put together. One of the challenges of encouraging people to re-engage with economic and social activities was always going to be getting over the first bump. Once people had experienced their first safe trip to a pub, visit to a friend, night at the theatre or whatever, return visits would be more likely. The incentive offered for that first trip back into the hospitality sector was a good way to tackle this. Clearly, the boost to the economy that this afforded would always need to be balanced against a potential increase in transmission that could also result. Whether the trade-off was well thought through or worthwhile is a matter for the Government. But purely from a messaging point of view, the conflicting priorities did add one more layer of confusion for the public. Returning to the hospitality sector ran the risk of increasing transmission, which we were being asked to be careful about. I note that the launch of the Eat Out to Help Out campaign clashed with the original launch of the Hands Face Space slogan {JR/265 – INQ000197174}. Discounted restaurant meals also sat uncomfortably with the Prime Minister's earlier exhortations that we needed to lose weight as a nation.

22.20. Similarly, 'freedom day' rhetoric seemed to be at odds with advice at the time that it was "*absolutely vital*" that "*we must all take responsibility so we don't undo our progress*" {JR/266 – INQ000197175}. Our HPRU team observed the behaviour of nearly 7,000 people using public transport and shops in the week before and after 'freedom day' and observed declines in rates of face coverings and physical distancing, suggesting that, unsurprisingly, the removal of legal restrictions and the wider 'freedom' messaging, as well as changes in infrastructure such as the removal of signage and one way systems, had the bigger impact than 'responsibility' messages. {JR/267 – INQ000197176} Given the high rates of vaccine coverage at the time, however, the importance of encouraging the public to engage more in social and economic activities may have been more pressing for the Government.

22.21. I would emphasise that we need to be careful not to overstate the impact of Government and media rhetoric on behaviour. In the CORSAIR dataset, we tracked a variable that we called 'risky social mixing.' This was a slightly complex variable, but essentially tracked the percentage of respondents who reported meeting up with other

people from multiple households, without being distanced from each other, indoors. The percentage of people doing this started to rise in March 2021 and continued to rise in a relatively straight line until November 2021. There was no particular leap upwards that seems to be associated with 'freedom day.' {JR/268 – INQ000197177}

22.22. I have been asked to comment specifically about any challenges that the strategy of Test and Trace posed in terms of messaging. Communication about NHS Test and Trace was clearly essential. Preventing people who had COVID-19 from mixing with others was important in reducing the spread of transmission. I have already commented on the importance of members of the public understanding what the symptoms of COVID-19 were and the fact that a surprising number of people did not correctly report the symptoms of COVID-19 that necessitated self-isolating and taking a test. In a paper by the CORSAIR team {JR/269 – INQ000196883}, we noted that while 87.9% of respondents knew that if they had symptoms of COVID-19 they should self-isolate, only 62.8% knew the main rules of self-isolation and that knowledge of the key rules was worse in England than in Scotland, Wales or Northern Ireland (though at best, only 71.9% of people in any of the nations understood the key rules). While it could be argued that people do not need to know the rules around self-isolation until they become symptomatic and contact NHS Test and Trace, at which point the NHS Test and Trace call handlers can provide education, in practice many people with symptoms of COVID-19 never took a test at all or else took a lateral flow test potentially without reporting the result {JR/270 – INQ000196867, JR/271 – INQ000196868}. Such people might never speak to a call handler. For them, understanding the basics of self-isolation might still have helped them to reduce the risk they posed to others. This is one area where messaging might have been improved.

22.23. Of course, communication was only one area in which behavioural science was important in terms of promoting self-isolation. SPI-B also had concerns about the support that was offered to people in self-isolation, not only because providing support might reduce the impact on wellbeing of being in isolation and hence also improve adherence, but also because more people would probably be willing to report a test result and enter self-isolation if they knew that they would be well-supported by the Government. As noted previously, this was the topic of several SPI-B papers.

22.24. While I am not aware of the detail of how other nations managed their test, trace and isolate policies, I believe the UK was in a good position at least in terms of producing evidence to inform its approach. For example, although I have noted that randomised

controlled trials of non-pharmaceutical interventions are rare in the literature, UKHSA and NHS Test and Trace should be proud of the large-scale trials that they conducted to test whether daily testing of contacts was as effective as self-isolation in the general public {JR/11 – INQ000196892} and in schools {JR/272 – INQ000197178}.

22.25. I would note that my experience throughout the pandemic was largely restricted to interactions with the UK Government. Although other members of SPI-B also advised the Scottish and Welsh devolved administrations, I did not have direct links there and am not familiar with the messaging in those nations or how they used behavioural science advice more generally, although observers from the devolved administrations were present for SPI-B meetings.

23: Following the science

23.1. I have been shown a quotation from the Institute of 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 was not its role to fill. At times the prime minister and ministers waited until the scientific evidence was overwhelming rather than using it alongside other inputs to make their own judgements.*" I do not know whether this is the case or not. First, I am not sure if there was a gap in strategy in the earliest days. As I have discussed (Paragraph 17.10) the earliest strategy related to controlling transmission ('squashing the sombrero') in an attempt to reduce pressure on the NHS, and I remember the Chief Medical Officer saying several times that the Government strategy was "*to do the right thing at the right time*" by which I understood that it was to attempt to impose the minimum restrictions necessary to control transmission for the least amount of time necessary. This is also the strategy articulated in the Government's coronavirus action plan published on 3 March 2020 which noted that the trade-off being considered was "*minimis{ing} the social and economic impact, subject to keeping people safe*" and that "*the effectiveness of these actions will need to be balanced against their impact on society*." However, I do agree with the Institute of Government that relying on SAGE would not have been a sufficient Government response to a crisis. I wrote a paragraph to explain my views on this which was included in a paper submitted to the British Journal of Health Psychology in April 2020, and which was itself based on a SPI-B paper of 22 March 2020 {JR/214 – INQ000196761}. In the paper, we wrote:

"*As with all science advice during a crisis, the decision as to which course of action is right for a country must, rightly, rest with elected political representatives. It is national governments who face the daunting task of weighing the possible effectiveness of different interventions against their potential economic and social costs, their population dynamics (e.g., age, health), capacity to deliver or support each option, as well as against the more general values of the nation. Science can take us only so far.*" {JR/229 **- INQ000197179}.**

23.2. I still believe this as a general principle, but as noted, it is not possible for me to say how much weight ministers put on the SAGE advice that they received.

23.3. Much discussion has focussed on the use of phrases such as "following the science" to describe the Government's strategy in the early days of the pandemic. I have no particular insight into how the phrase originated, but from reviewing material online the first example of it I have found is on 11 March 2020 when it was used by the deputy Chief Medical Officer Dr Jenny Harries in an explanation to the public as to why the Government were not going to be following some of the strategies being attempted elsewhere such as banning mass gatherings. In a video interview between the Prime Minister and Dr Harries on 11 March 2020, when discussing mass gatherings the Prime Minister said "*Right, there's obviously people are under a lot of pressure, politicians and governments around the world are under a lot of pressure to be seen to act, so they may do things that are not necessarily dictated by the science*" to which Dr Harries replied "*So as a professional, I am absolutely delighted that we are following the science and the evidence.*" {JR/273 – INQ000239472}

23.4. Its use in this specific context strikes me as reasonable. It was clear from polling at that time that many members of the public felt that banning mass gatherings should occur, yet as Dr Harries noted in the interview, SPI-M had suggested that this would not have a dramatic effect on the coming wave of infection. In the UK at that time, trust in politicians was at an all-time low, while trust in scientists was much better {JR/274 – INQ000197180}. Explaining to an anxious public that one particular policy option would not be followed because it was not in line with 'the science,' and then explaining what 'the science' was in that instance, as Dr Harries went on to do, seems a reasonable way to explain to people that the decision had been thought-through and was not based on economic grounds alone.

23.5. However, as a general statement of strategy, rather than as part of an explanation for a specific policy decision, 'following the science' is problematic. It glosses over the

complexities, uncertainties and gaps in the evidence that underlies 'the science.' For SPI-B, these uncertainties and gaps were highlighted in our reports on many occasions. In the run-up to lockdown in March 2020, for example, SPI-B papers included explicit statements that:

(1) *"For the behaviours under discussion, there is limited evidence on the best phrasing of messages, the barriers and stressors that people will encounter when trying to follow guidance, the attitudes of the public to the interventions, or the best strategies to promote adherence in the long-term."* {JR/197 – INQ000196743}

(2) *"Empirical evidence for the behavioural and social impact of, and adherence to, each of the strategies is limited. We are not aware of any evidence on their interaction. These comments are therefore based on the collated expert opinions of SPI-B participants."* {JR/186 – INQ000196744}

(3) *"Not aware of any data for household isolation… Not aware of any data for households of cases… Not aware of any data… Unclear… Unknown…"* {JR/198 – INQ000196747}

(4) *"We continue to have very limited data on the psychological or behavioural aspects of banning or discouraging public gatherings in this context. Our comments are largely based on expert opinion and should be evaluated with this caveat in mind."* {JR/160 – INQ000196748}

(5) *"The coronavirus outbreak is a unique challenge. Identifying an evidence base from which to make behavioural science recommendations is difficult. This is made harder because there is evidence to show that how people respond to infectious disease outbreaks differs between countries {1,2}. While there is evidence from the swine flu outbreak, the current context is different and it is not clear how well the evidence translates. Many comments from SPI-B are by necessity based on members' knowledge of theory and evidence from different, albeit related, contexts."* {JR/161 – INQ000196749}

(6) *"Members of SPI-B have not found a robust academic evidence base relating to the acceptability or social impact of* {JR/199 – INQ000196750}

(7) "*The data we reviewed were not ideal*." {JR/168 – INQ000196772}

23.6. A second issue about 'following the science' as a strategy is that it does not capture the range of issues that I would hope policymakers consider when making decisions.

There are many other issues politicians should factor into decision making, including economic policies, security issues, legality, their own moral judgement, their view of the right balance between precaution and risk, and public opinion among the electorate. Science is an important strand to decision making in a crisis, but it cannot be the only strand.

23.7. I cannot recall any specific instances where advice or papers from SAGE or SPI-B were affected by a perception that the Government was simply 'following the science.' However, the general focus on material from SAGE and input from the participants was inevitably a source of stress. I note again my email to the secretariat of 12 March 2020 (paragraph 10.3) in which I said that "*we are not civil servants and can't (and should not be made to feel that we are) doing that role or doing anything more than giving advice that you then can bin if you see fit.*" This comment was specifically sparked by a request to review a TV advert script with a 45-minute turnaround time, but it also fits with a feeling that policymakers needed to be reminded that our advice was nothing more than that.

24: Communication of the science

24.1. Most communication from the Government to the public rightly focussed on changes in the epidemic or developments around measures that might protect people, including evidence around, for example, facemasks, tests and vaccination. There were few behavioural science developments and uncertainties that required rapid communication. There were, however, areas that was not well addressed. In particular, at a No10 press conference on 12 March 2020, the CMO said that "*the behavioural science*" showed that "*if you start too early* {with restrictions} *and then people's enthusiasm runs out just about the peak which is exactly the time that we want people to be doing these interventions that is actually not a productive way to do it."* In fact, although SPI-B was concerned that some specific activities such as shielding would require people to receive support, we had not provided any opinion about whether there was a general risk of "enthusiasm {running} out just about the peak." We raised this in SAGE the next day and ensured that this line was included in the minutes: "*difficulty maintaining behaviours should not be treated as a reason for not communicating with the public about the efficacy of the behaviours and should not be taken as a reason to delay implementation where that is indicated epidemiologically*" {Point 30, JR/240 – INQ000197121}.

24.2. Overall, the boundaries between scientific advice and decision-making were not well explained by the UK Government. To a large degree this was because the evidence base that was being used to guide decisions was often not transparently presented. In the initial few months of the crisis, there was a regrettable lack of transparency about who the participants of SAGE were and what advice they were giving. I believe this reflected a knee-jerk assumption within Government that documents should be restricted unless a case was made for their release. The delay in releasing papers was regrettable as it prevented our work from receiving review and critique by our peers, it prevented the public from understanding how the pandemic might develop, it created an unnecessary media story around secrecy which distracted from the important public health messages that should have been the focus at the time, and it impeded public understanding of why certain policies were or were not being enacted. However, once SAGE papers began to be released into the public domain, the public were then presented with a one-sided view of the inputs to policy decisions. For example, if there were economic analyses by the Treasury or impact assessments by the Department for Education feeding in to COBR, these were not presented or subjected to the same level of public analysis as the SAGE papers. For the public to understand the evidence underlying decisions made by the Government required that all such material, not simply the papers produced by SAGE, should have been released. Indeed, my attitude to this is that transparency should be the automatic default for crisis planning and response, unless there is a clear reason not to be transparent. There will be occasions where reasons exist. The UK should not reveal information that might be exploited by hostile actors, for example. However, rather than questioning the role of transparency in preparedness and response, I believe it is secrecy that needs to be justified.

24.3. This lack of transparency also meant that, even within Government, it was not always obvious what data existed or who had access to it. On 5 February 2021, in our response to the request from the SAGE secretariat for examples of the principal obstacles we had faced in the effective use of evidence in decision-making, the three co-chairs of SPI-B said {JR/181 – INQ000197116}:

"Knee-jerk secrecy. Government is awash with data labelled Official Sensitive. Often, there seems to be little reason for the protective marking. These data enter the public domain in a variety of unsatisfactory ways, in annexes to a SAGE report, in testimony to the Science and Technology Select Committee or in a slide at a No 10 briefing. The absence of openness means that data from smaller academic studies drive the public discourse, improvements to study methods via peer review do not happen, experts

who are outside the system waste time providing suggestions based on partial information, civil servants fret over what 'cover' they will have in sharing reports with advisory groups, and even within Government colleagues are often completely unaware that a particular question has already been answered in a different department. Changing the default setting to "publish it, unless there's a good reason not to" would improve all of this.

Lack of coordination of government and academic research. Government departments often have the resources to rapidly operationalise required research, but this is not subject to the same level of scrutiny as academic research and often is therefore not as good as it could be due to limitations in the methods used. Academic research is usually high quality but often much too slow to be useful and not sufficiently aligned with rapidly changing policy needs. Partnering between independent academics and government scientists has the potential to reduce these problems, yielding higher quality rapid policy-relevant research. The Testing Initiatives Evaluation Board provides an example of how this could be done, although ways of working together effectively are still at an early stage of evolution."

24.4. In terms of how ministers communicated changes in approach as scientific understanding evolved, as I have noted, I believe changes in approach should have been governed by a wider range of factors that just scientific understanding alone. That said, when SAGE minutes during March 2020 reflected a changing understanding of the timelines and potential impact of the pandemic, I think communications to the public about the approach that was now needed did follow quickly. For example, when SAGE advised on 16 March 2020 that "*the advice from SAGE has changed regarding the speed of implementation of additional interventions… clear evidence to support additional social distancing measures to be introduced as soon as possible*" {JR/275 – **INQ000075664**} the Prime Minister announced on the same day "*that now is the time for everyone to stop non-essential contact with others and to stop all non-essential travel*" {JR/276 – INQ000197182}. A similarly swift response to changes in the scientific evidence was not seen throughout the pandemic. In particular, while SAGE described on 10 September 2020 that "*the current situation in the UK is analogous to the one in early February, with rapidly increasing incidence*" {JR/277 – **INQ000120554**} and that "*incidence across the UK continues to increase rapidly*" on 17 September 2020 {JR/278 – **INQ000120558**}, this did not lead to a national lockdown until 22 September 2020, although some measures such as the "rule of six" were introduced.

25: Involving the public in preparedness

25.1. The future development of pandemic policy would be improved by involvement of the public. I note that in the report of Exercise Cygnus, a key limitation that the exercise participants had was in understanding how the public might react to a severe pandemic {JR/279 – INQ000197186}. Given that the effectiveness of the various policies under consideration are dependent on public behaviours, understanding how people might behave is important, with the caveat that this is difficult to predict. For example, would voluntary behaviour change be sufficient to curb transmission and what communities would be left particularly at risk by such an approach? Research to understand how the public might respond to a future incident, and the factors that would support them in adhering to any guidance that might be given, would be wise.

25.2. In doing this, it is essential not to view 'the public' as a homogenous group. The perceptions, attitudes, responses, needs and abilities to engage in different protective behaviours will likely differ depending on health status, age, cultural background, socio-economic factors and more. Ensuring that such differences are captured in any plan requires consultation with people in these groups. Policies are more likely to be acceptable and feasible if people from the communities that will be affected have a chance to input into planning from the outset.

25.3. Transparency would also help the Government to involve the public in future plans and to increase the chances of these plans working. A public debate about the right way for the country to manage a pandemic is best held ahead of time, rather than during the incident itself. Demonstrating that the plan is evidence-based and thought-through, rather than having been developed in the heat of the moment, is also likely to improve public confidence and willingness to adhere to it. I would note that this applies to preparedness for all disasters, not just pandemics. Openness about how the Government would respond to the range of risks listed in the National Risk Register would likely be helpful in ensuring that gaps in the planning are identified and in improving public confidence. I accept that there are probably issues of national security that may prevent full disclosure in some cases.

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.

Signed: Personal Data

Dated: 21 August 2023