

Witness Name:

James Rubin

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COVID-19 INQUIRY – MODULE 2

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Questionnaire Response – Professor James Rubin

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**1: Overview of qualifications, career history, professional expertise and major publications:**

- 1.1. I have a BSc in psychology (University of Bristol, 1998), an MSc in psychological research methods (University of Exeter, 1999) and a PhD in psychology as applied to medicine (University of London, 2003). My area of professional expertise is in understanding how people think about, and respond to, major incidents and public health crises. I have worked in this area since 2005. As part of this, I have studied how members of the public respond to infectious disease outbreaks. I had published around 30 papers prior to the COVID-19 pandemic relating specifically to psychological aspects of infectious disease transmission and have published nearly 60 papers relating to COVID-19.
- 1.2. I have been at King's College London since 1999, including as a PhD student, postdoctoral researcher, senior lecturer, reader and professor. At the start of the COVID-19 pandemic I had been a Reader in the Psychology of Emerging Health Risks since 2017 and assistant director for the National Institute for Health Research (NIHR) Health Protection Research Unit (HPRU) in Emergency Preparedness and Response since 2014. I was promoted to full professor in February 2021 and to director of the HPRU in May 2022.
- 1.3. As a research fellow during the influenza H1N1 ('swine flu') pandemic, I was seconded to University College London for five months in 2009/10 to work on

a project headed by Professor Susan Michie, who at the time was chair of a subcommittee of SAGE called the Scientific Pandemic Influenza group on Behaviour and Communication (SPI-B&C). The project involved analysing a substantial amount of polling data collected by the Department of Health on how the public were responding to the pandemic.

- 1.4. After the swine flu pandemic, I led several studies from 2012 onwards on the possible impact of a future pandemic on the UK public. This included as principal investigator of a project funded by the NIHR as part of its portfolio of pre-prepared pandemic studies. That study originally went by the acronym 'FluTEST.' FluTEST was activated by NIHR in February 2020 for the COVID-19 pandemic, and our team supported the Department of Health and Social Care in analysing data from the regular polling that they conducted with the public. The acronym for the project subsequently changed to 'CORSAIR.' The CORSAIR website gives a detailed account of this [work](#).

### **Publications**

My ten most important papers relating to pandemics, based on the number of times they have been cited in other academic papers, are:

- 1.5. Brooks SK, Webster R, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. [The psychological impact of quarantine and how to reduce it: Rapid evidence review](#). *Lancet* 2020;395:912-920.
- 1.6. Rubin GJ, Amlôt R, Page L, Wessely S. [Public perceptions, anxiety, and behaviour change in relation to the swine flu outbreak: Cross sectional telephone survey](#). *BMJ* (Online). 2009;339(7713):156 doi:10.1136/bmj.b2651.
- 1.7. Rubin GJ, Wessely S. [The psychological effects of quarantining a city](#). *BMJ* 2020; 368. doi: 10.1136/bmj.m311
- 1.8. Rubin GJ, Potts HWW, Michie S. [The impact of communications about swine flu \(influenza A H1N1v\) on public responses to the outbreak: Results from 36 national telephone surveys in the UK](#). *Health Technology Assessment*. 2010;14(34):183-266 doi:10.3310/hta14340-03.
- 1.9. Brooks SK, Dunn R, Amlôt R, Rubin GJ, Greenberg N. [A Systematic, Thematic Review of Social and Occupational Factors Associated with Psychological](#)

- [Outcomes in Healthcare Employees during an Infectious Disease Outbreak.](#)  
Journal of Occupational and Environmental Medicine. 2018;60(3):248-57  
doi:10.1097/JOM.0000000000001235.
- 1.10. Jarvis CI, Van Zadvort K, Gimma A, Prem K, MHHID Covid-19 Working Group, Klepac P, Rubin GJ, Edmunds WJ. [Quantifying the impact of physical distance measures on the transmission of COVID-19 in the UK.](#) *BMC Medicine* 2020; 18:124. Doi: 10.1186/s12916-020-01597-8
- 1.11. West R, Michie S, Rubin GJ, Amlôt R. [Applying principles of behaviour change to reduce SARS-CoV-2 transmission.](#) *Nature Human Behaviour* 2020 doi: 10.1038/s41562-020-0887-9
- 1.12. Sherman SM, Smith LE, Sim J, Amlôt R, Cutts M, Dasch H, Rubin GJ, Sevdalis N. [COVID-19 vaccination intention in the UK: Results from the 'COVID-19 Vaccination Acceptability Study' \(CoVAccS\), a nationally representative cross-sectional survey.](#) *Human Vaccination and Immunotherapy* 2021: DOI: 10.1080/21645515.2020.1846397
- 1.13. Allington D, Duffy B, Wessely S, Dhavan N, Rubin J. [Health protective behaviour, social media usage, and conspiracy belief during the COVID-19 public health emergency.](#) *Psychological Medicine* 2020; doi: 10.1017/S003329172000224X
- 1.14. Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. [How to improve adherence with quarantine: rapid review of the evidence.](#) *Public Health* 2020; 182: 163-169 doi: 10.1016/j.puhe.2020.03.007

**2: List of groups I participated in and the relevant time period:**

- 2.1. Nervtag (member): 2018 to now
- 2.2. SAGE (participant): 22 January 2020 to June 2021.
- 2.3. SPI-B (chair or co-chair): 2 March 2020 to June 2021.
- 2.4. SPI-B (participant): June 2021 to now.

**3: Overview of involvement in groups between January 2020 and February 2022:**

**When and how you came to be a participant**

- 3.1. In 2018, the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) advertised for a behavioural scientist to join the group. I applied and was appointed following interview.
- 3.2. Between around 2018 and the start of the COVID-19 pandemic I was invited by the Government Office for Science to take part in three exercises held by SAGE, relating to non-pandemic emergency scenarios. In January 2020, I was invited by the Government Office for Science to attend the first COVID-19 SAGE meeting. I was then regularly invited to attend further meetings until June 2021.
- 3.3. On 13 February 2020, SAGE decided to establish the Scientific Pandemic Influenza (later, 'Insights') – Behaviour (SPI-B) subgroup. Because I had experience working in the predecessor 'SPI-B&C' group during the 2009/10 swine flu pandemic, I offered to set up and chair SPI-B. Later (around April 2020) I moved to co-chairing with two colleagues. Since standing down as co-chair in June 2021, I have remained as a participant of SPI-B.

**The number of meetings you attended, and your contributions to those meetings**

- 3.4. Between January 2020 and mid-February 2022, I attended 48 meetings of NERVTAG (include 3 non-COVID meetings and several that may have been after mid-February 2022), 66 meetings of SAGE and 39 meetings of SPI-B. I also attended regular catch-ups between the chairs of all SAGE subgroups to discuss ongoing work, catch-ups between the SPI-B co-chairs and secretariat, working groups relating to specific topics and one-off meetings on individual issues. I do not know in total how many of those related meetings that I attended.
- 3.5. For NERVTAG meetings, my contributions were limited to discussion of how psychological factors might affect the points under discussion. Once it was set



up, SPI-B became the natural home for these conversations – my input into NERVTAG was therefore limited.

- 3.6. For SAGE meetings, my contributions were predominantly to report on papers that had been produced for discussion by SPI-B, to identify if and how behavioural science factors might need consideration in other issues that were discussed, and to identify where SPI-B could usefully contribute in future.
- 3.7. For SPI-B meetings, I regularly acted as chair (a role shared initially with a deputy chair, then two co-chairs). The October 2020 Terms of Reference for SPI-B give an accurate summary of the roles of the chair. They say; *“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.”*
- 3.8. I also contributed to SPI-B in terms of my own areas of expertise, particularly in relation to whether people adhered to official recommendations around test, trace and isolate policies. I co-authored several of the group’s papers on this and other areas. Those papers are listed in response to question 4.
- 3.9. I also, as part of my role with these groups, attended related working groups and meetings with civil servants from UKHSA / Cabinet Office / DHSC and elsewhere, to discuss the implications of SPI-B evidence.

**Your role in providing research, information and advice**

- 3.10. My personal area of expertise is in how people understand physical symptoms and potential exposures that may be harmful to health, and how these perceptions influence behaviour. My role in providing research, information and advice focussed on these areas. I was particularly involved in issues relating to testing and self-isolation, public understanding of official guidance, and public adherence to official guidance.
- 3.11. Much of my research was conducted as part of the CORSAIR study. This was a collaboration between researchers at King’s College London, University College London and Public Health England / UKHSA. We added value to the

regular polling that was commissioned by DHSC's communications team by exploring the associations within the data. Our main "customer" for analyses was DHSC, but we also assisted other teams (including SPI-B) who asked for rapid analyses. All of the outputs from this project are available on the [project website](#).

- 3.12. Other research was conducted under the auspices of the NIHR HPRU in Emergency Preparedness and Response. This is a partnership between research teams in King's College London, the University of East Anglia and PHE/UKHSA. I led the response theme within the Unit and offered the team's support to SAGE in providing rapid analyses of behavioural science topics where useful. This included work conducted in collaboration with other teams, notably the HPRU in Behavioural Science and Evaluation at the University of Bristol, PHE / UKHSA, and a team of modellers led by Professor John Edmunds (the CoMIX study). The output from these studies is listed in answer to Question 5.

**4: Summary of documents to which I contributed for the purposes of advising groups:**

The SPI-B secretariat maintained an excel spreadsheet in which the authors of papers produced by the group from 22 March 2020 onwards are listed. Based on that list, and on my recollection for the papers prior to 22 March 2020, I co-authored the following papers:

- 4.1. [SPI-B: Risk of public disorder, 25 February 2020](#): This paper answered the first question posed to SPI-B, relating to the likelihood of disorder during a pandemic. It concluded that large-scale rioting was unlikely, and that any disorder would likely be triggered by perceptions of the Government's response to the pandemic
- 4.2. [Potential effect of non-pharmaceutical interventions \(NPIs\) on a COVID-19 epidemic in the UK, 26<sup>th</sup> February 2020](#) : This table summarized considerations about four NPIs (school closure, isolation of people with symptoms, quarantine of those in contact with people with symptoms, social distancing). SPI-B's input (page 3 of the document) listed some considerations about messaging, adherence and public support:

- 4.3. [SPI-B: Behavioural and social interventions on a COVID-19 epidemic in the UK, 3 March 2020](#) : This paper reflected discussions in a SPI-B meeting, and recommended the need for clear, transparent reasons of any interventions to be used, reduction of ambiguity in guidance, and the need for rapid research given the limited evidence for many issues.
- 4.4. [SPI-B: Insights on combined behavioural and social interventions, 4 March 2020](#): This paper summarized SPI-B's view on the NPIs under discussion at the time. School closures were seen as likely to be highly disruptive, while other interventions were probably more socially acceptable. The limited empirical evidence base was highlighted.
- 4.5. [Potential impact of behavioural and social interventions on an epidemic of COVID-19 in the UK, 4 March 2020](#): This table summarized considerations about six NPIs. SPI-B's input (page 5 of the document) listed some considerations about public support and attitudes, likely compliance and barriers / facilitators / communication issues.
- 4.6. [Potential impact of behavioural and social interventions on an epidemic of COVID-19 in the UK, 9 March 2020](#): This table summarized considerations about specific combinations of six NPIs. SPI-B's input (pages 6 and 7 of the document) listed some considerations about public support and attitudes, likely compliance and barriers / facilitators / communication issues.
- 4.7. [SPI-B: Insights on self-isolation and household isolation, 9 March 2020](#): This paper summarised SPI-B's discussion of guidance produced by PHE on how to support people in self-isolation, noting that different people would have different needs, that ethical issues around household isolation should be considered by appropriate experts, that various strategies to improve adherence existed, and that rapid research was needed.
- 4.8. [SPI-B: Insights on public gatherings, 12 March 2020](#): This paper was produced in response to a SAGE request that all subgroups reconsider their advice on public gatherings. It stresses a point from SPI-B's 4 March paper that "if a decision is made not to ban or discourage public gatherings, a clear explanation should be given to the public" and states that "we continue to have very limited data" for the issues at hand. In an addendum produced after the 12 March 2020



- press conference at No 10, it suggests that concerns about the sustainability of a behaviour are not valid reasons for not communicating with the public about the efficacy of those behaviours, and warns that trust could be lost if measures seen in other countries are not put into place.
- 4.9. [SPI-B: Note on school closures, 17 March 2020](#): This paper addressed a question from SAGE as to whether the benefits of school closures might be outweighed if children were looked after by grandparents or interacted with each other outside of school. It highlights a lack of evidence and suggests consideration of the perceived legitimacy of closures, the need to consult with teachers, and the chance that children of key workers might choose not to attend school even if they remained open for them.
- 4.10. [SPI-B: Current adherence to behavioural and social interventions in the UK, 22 March 2020](#): This paper reviewed the evidence available to SPI-B on public behaviour after the Prime Minister had asked people to remain at home where possible but before a legally enforced lockdown had begun. It concluded that “there appears to be room for social distancing to be increased still further” and that a single group within Government should take ownership of monitoring adherence.
- 4.11. [SPI-B: The role of behavioural science in the coronavirus outbreak, 14 March 2020](#): This explains the role of SPI-B. It explains that the group does not comment on what interventions should be used, but provides advice aimed at “anticipating and helping people adhere to interventions that are recommended by medical or epidemiological experts.”
- 4.12. [SPI-B: What is the best approach to encourage people to engage with the behaviours required for a suppress and control route? 22 April 2020](#): This paper outlines how behavioural science might support the development of a “suppress and control” approach to the pandemic.
- 4.13. [Symptom-based contact tracing is likely to reduce adherence to advice to quarantine in comparison to test-based approaches \(note provided to NERVTAG\). 29 April 2020](#): This paper evaluates whether tracing the contacts of people who are symptomatic would lead to lower adherence than tracing the contacts of people who have had a positive test. It notes the absence of directly



relevant data and concludes based on theoretical principles that symptoms-based contract tracing is likely to result in lower adherence than test-based contact tracing.

- 4.14. [SPI-B Summary: Key behavioural issues relevant to test, trace, track and isolate. 6 May 2020](#): This paper flags data from a DHSC survey suggesting low adherence to self-isolation and discusses several factors that might improve adherence to the test, trace and isolate system.
- 4.15. [SPI-B: Recommendations to increase adherence by healthcare workers to personal protective behaviours aimed at reducing nosocomial SARS-CoV-2 transmission. 12 June 2020](#): This paper considers what factors might improve adherence to behaviours such as wearing personal protective equipment or social distancing among healthcare workers.
- 4.16. [SPI-B: Consensus on reintroduction of measures and their impact on rate of infection. June 2020](#): This paper discusses a range of behavioural and psychological considerations to bear in mind if it became necessary to reimpose restrictions. It suggests preparing a communications campaign in advance, based on principles of co-creation, to pre-empt these issues.
- 4.17. [SPI-B: The impact of financial and other targeted support on rates of self-isolation or quarantine. 17 September 2020](#): This paper notes that adherence to self-isolation is likely to be improved by the provision of additional support to those affected including financial, practical and emotional support and improved information.
- 4.18. [Summary of the effectiveness and harms of different non-pharmaceutical interventions, 21 September 2020](#): This paper discusses the possible costs and benefits of various measures that might be required to cope with an increase in cases. SPI-B's input included a focus on implementation, highlighting the need for consistency, positive framing, equity, co-production, support, and obtaining feedback.
- 4.19. [Non-pharmaceutical interventions \(NPIs\) table, 21 September 2020](#): This table accompanies the Summary paper cited above. SPI-B's input included discussion of the social and psychological impact of the measures, and highlighted some implementation issues to consider.

- 4.20. [SPI-B: What are the potential behavioural effects of reducing the duration of quarantine for contacts? 12 November 2020:](#) This paper notes a lack of high-quality evidence, but suggests that a shorter duration of quarantine is likely to make adherence to quarantine more acceptable and sustainable for some people, might increase willingness to take a test and report contacts, and might increase the ability of others to provide support to people in self-isolation.
- 4.21. [SPI-B: How important is symptom recognition in leading people to seek a test for COVID-19? 30 November 2020:](#) This paper notes that there are low levels of knowledge in the UK population as to the symptoms of COVID-19 which is likely to be hampering engagement with test, trace and isolate systems. It proposed that new routes to communicate about these symptoms should be prioritised.
- 4.22. [EMG, SPI-B and SPI-M: Reducing within- and between-household transmission in light of new variant SARS-CoV-2. 15 January 2021:](#) “This document summarises the current scientific evidence on actions that would serve to reduce household transmission of SARS-CoV-2. It is largely based on previous SAGE papers and takes account of the potential impacts of the new variant of the virus.” [Copied from the exec summary]
- 4.23. [SPI-B: Behavioural and social considerations when reducing restrictions. 10 February 2021:](#) This paper summarises factors to consider when easing restrictions. It highlights eight contextual factors that policy makers might wish to take into account, such as challenges for enforcement, a faster return to social mixing in young people, and challenges around a growing complexity of messages.
- 4.24. [SPI-B: Note on social and behavioural impacts of lifting restrictions, including testing and self-isolation. 10 February 2022:](#) This note discusses considerations around the lifting of restrictions and withdrawal of testing. It particularly highlights issues and unintended consequences that might affect those who are clinically vulnerable or from deprived socio-economic and minority groups.

I also co-authored the following documents in my capacity as an independent academic, which were shared with SAGE:

- 4.25. [Workplace attendance in people able to work from home and factors predicting it: evidence from cross-sectional surveys, 4 February 2021](#): This paper explores why people who could be working full-time from home, nonetheless report going to their usual place of work. It identifies that this is more likely in those who are vaccinated, suffering financial hardship, are from socio-economic grade C2DE, have a dependent child at home and work in certain sectors.
- 4.26. [Testing when symptomatic, and staying at home with influenza-like illness, during autumn and winter 2021, 30 September 2021](#): This paper highlights various issues that might affect rates of testing among people with COVID-19, including the ubiquity of lateral flow tests and increasing rates of influenza, as well as challenges people would face in adhering to the recommendation to try to stay at home when ill with a non-COVID-19 respiratory infection.
- 4.27. [Adherence to the test, trace and isolate system: results from a time series of 21 nationally representative surveys in the UK, 3 September 2020](#): This paper, based on CORSAIR work, notes that self-reported adherence to test, trace and isolate behaviours is low, and that practical and financial support is likely to improve adherence.
- I co-authored the following documents in my capacity as an independent academic which were shared with SPI-B. Additional academic papers from my group that were publicly available may also have been shared with SPI-B – I do not have a record.:
- 4.28. [All CORSAIR reports](#), which were placed on an internal file for access by any SPI-B participant. These reports are listed and summarised in my response to question 5.
- 4.29. Carter P, Megnin-Viggars O, Rubin GJ. [What factors influence symptom reporting during an emerging infectious disease outbreak? A rapid review of the evidence](#). *Health Security* 2021. <https://doi.org/10.1089/hs.2020.0126> [Paper written with the embedded academics attached to SPI-B as part of their support]
- 4.30. Megnin-Viggars O, Carter P, Melendez-Torres GJ, Weston D, Rubin GJ. [Facilitators and barriers to engagement with contact tracing during infectious disease outbreaks: A rapid review of the evidence](#). *PLOS One* 2020; 15:



e0241473 [Paper written with the embedded academics attached to SPI-B as part of their support]

- 4.31. Brooks SK, Greenberg N, Wessely S, Rubin GJ. [Factors affecting healthcare workers' compliance with social and behavioural infection control measures during emerging infectious disease outbreaks: Rapid evidence review](#). *BMJ Open* 2021; 11(8):e049857 doi: 10.1136/bmjopen-2021-049857 [Work specifically requested to inform advice].

I co-authored the following document in my capacity as an independent academic which was shared with SPI-M:

- 4.32. Brooks SK, Smith LE, Webster RK, Weston D, Woodland L, Hall I, Rubin GJ. [The impact of unplanned school closure on children's social contact: Rapid evidence review](#). *Eurosurveillance* 2020 25;13.

- 4.33. I also authored or co-authored the following documents. Unless noted otherwise, a preliminary search of my files has suggested that I do not have copies of these. Note that the list below is likely to be a partial list of additional material and is based largely on notes that I made from January to March 2020 – I do not have a record for the full period. I have included documents I contributed to which were provided directly to the Government or official UK agencies, as well as to SAGE and its subgroups:

- A presentation to NERVTAG on the topic of symptom attribution. Date unknown. This was based on papers published or in preparation by my team
- A presentation to the Bank of England on behaviour during the pandemic (9 October 2020).
- Notes to NERVTAG (12 January 2020) focussing on lack of evidence about 'public reassurance' from screening at airports and possible adverse effects of screening (e.g. stigma).
- Advice to Deputy Chief Medical Officer (22 January 2020) on drafting a leaflet explaining what symptoms to look out for and how to contact health agencies, which was to be provided to passengers at airports.
- Advice to PHE on quarantine arrangements at Arrowe Park (1 February 2020).



- Advice to PHE on psychological implications of quarantine (2 February 2020).
- Provision of three academic papers on quarantine to Civil Contingencies Secretariat (3 February 2020), and of two of these papers (Webster et al, Brookes et al) to PHE communications (11 February 2020):
  - Rubin GJ, Wessely S. [The psychological effects of quarantining a city](#). *BMJ* 2020; 368. doi: 10.1136/bmj.m311
  - Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. [How to improve adherence with quarantine: rapid review of the evidence](#). *Public Health* 2020; 182: 163-169 doi: 10.1016/j.puhe.2020.03.007
  - Brooks SK, Webster R, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. [The psychological impact of quarantine and how to reduce it: Rapid evidence review](#). *Lancet* 2020;395:912-920.
- A 'behavioural science primer' provided to No10 and the Government Communications Service (11 February 2020).
- Review of DHSC 'catch it, kill it, bin it' campaign and provision of general behavioural science principles to DHSC communications (12 February 2020). It is possible that the summary of general principles may also be available from the UKHSA communications team.
- Advice to Government Communication Service and DHSC on considering appropriate messaging for worst case scenario (12 February 2020). I am unsure if this was a document or verbal feedback, or how in depth the advice was.
- Draft BMJ opinion piece on not shaking hands sent to PHE (6 March 2020)
  - Smith LE, Yardley L, Michie S, Rubin J. [Should we wave goodbye to the handshake?](#) *BMJ Opinion* 10 March 2020
- Advice to Government Communication Service on support for people in isolation (9 March 2020). Note: I am unsure if this was a document, verbal advice, or relates to the SPI-B paper produced on this date.

- Notes on issues surrounding communication, provided to the SPI-B co-chairs and secretariat to support preparation of a SPI-B co-chair, Professor Ann John, ahead of her Select Committee appearance on 21 March 2022.

**5: Summary of articles, interviews and/or evidence:**

- 5.1. A list of articles, interviews and evidence is provided below. Almost all of these papers relate to the UK's responses to the COVID-19 pandemic, broadly defined to include the UK public's response. Academic articles that are currently in development are not listed here.

**Academic journal articles relating the UK's response to the COVID-19 pandemic**

- 5.2. I have not provided a summary for these academic papers. Where the title is not self-explanatory, the link should provide access to the brief abstract for the paper.
- 5.3. Gimma A Munday JD, Wong KLM, Coletti P, van Zandvoort K, Prem K, CMMID COVID-19 working group, Klepac P, Rubin GJ, Funk S, Edmunds WJ, Jarvis CI. CoMix: [Changes in social contacts as measured by the contact survey during the COVID-19 pandemic in England between March 2020 and March 2021](#). *Plos Medicine* 2022; doi: 10.1371/journal/pmed.1003907
- 5.4. Davies R, Mowbray F, Martin AF, Smith LE, Rubin GJ. [A systematic review of observational methods used to quantify personal protective behaviors among members of the public during the COVID-19 pandemic, and the concordance between observational and self-report measures in infectious disease protection](#). *BMC Public Health*. 2022; 1436. Doi: 10.1186/s12889-022-13819-0
- 5.5. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [How has the emergence of the Omicron SARS-CoV-2 variant of concern influenced worry, perceived risk, and behavior in the UK? A series of cross-sectional surveys](#). *BMJ Open* 2022; 12: e061203. Doi: 10.1136/bmjopen-2022-061203
- 5.6. Love N, Ready D, Turner C, Yardley L, Rubin GJ, Hopkins S, Oliver I. [The acceptability of testing contacts of confirmed COVID-19 cases using serial, self-administered lateral flow devices as an alternative to self-isolation](#). *Journal of Medical Microbiology* 2022; 71: doi: 10.1099/jmm.0.001567

- 5.7. Woodland L, Hodson, A., Webster RK, Amlôt R, Smith, LE, Rubin J. [A qualitative study evaluating the factors affecting families' adherence to the first COVID-19 lockdown in England using the COM-B model and TDF](#). *International Journal of Environmental Research and Public Health* 2022; 19: 7305 Doi: 10.3390/ijerph19127305
- 5.8. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [Psychological wellbeing in the English population during the COVID-19 pandemic: a series of cross-sectional surveys](#). *J Psychiatr Res* 2022; 153: 254-259. Doi: 10.1016/j.psychires.2022.06.040.
- 5.9. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [How have patterns of social mixing changed during the pandemic? A series of cross-sectional nationally representative surveys](#). *Science Reports* 2022; 12: 10436. Doi: 10.1038/s41598-022-14431-3
- 5.10. Rubin GJ, Smith LE, Amlôt R, Fear NT, Potts HWW, Michie S. [Do people with symptoms of an infectious illness follow advice to stay at home? Evidence from a series of cross-sectional surveys in the UK](#). *BMJ Open* 2022; 12: e060511. Doi:10.1136/bmjopen-2021-060511
- 5.11. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [Who is engaging with lateral flow testing for COVID-19 in the UK? The COVID-19 Rapid Survey of Adherence to Interventions and Responses \(CORSAIR\) study](#). *BMJ Open* 2022; 12: e058060. Doi: 10.1136/bmjopen-2021-058060
- 5.12. Woodland L, Mowbray F, Smith LE, Webster RK, Amlôt R, Rubin GJ. [What influences whether parents recognise COVID-19 symptoms, request a test and self-isolate: A qualitative study](#). *PLOS One* 2022; 17: e0263537. Doi: 10.1371/journal.pone.026537
- 5.13. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [Engagement with protective behaviors in the UK during the COVID-19 pandemic: A series of cross-sectional surveys \(the COVID-19 Rapid Survey of Adherence to Interventions and Responses \[CORSAIR\] study\)](#). *BMC Public Health* 2022; 475: doi: 10.1186/s12889-022-12777-x



- 5.14. Cai S, Zhang T, Robin C, Sawyer C, Rice W, Smith LE, Amlôt R, Rubin GJ, Yardley L, Hickman M, Oliver I, Lambert H. [Learning about COVID-19 across borders: Public health information and adherence among international travelers to the UK](#). *Public Health* 2022; 203: 9-14. Doi: r10.1016/j.puhe.2021.11.05
- 5.15. Zhang T, Robin C, Cai S, Sawyer C, Rice W, Smith LE, Amlôt R, Rubin GJ, Reynolds, Yardley L, Hickman, M, Oliver I, Lambert H. [Public health information on COVID-19 for international travelers: Lessons learned from a mixed-method evaluation](#). *Public Health* 2021; 193: 116-123. doi: 10.1016/j.puhe.2021.01.028
- 5.16. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [Tiered restrictions for COVID-19 in England: knowledge, motivation and self-reported behavior](#). *Public Health* 2022; 204: 33-39 doi: 10.1016/j.puhe.2021.12.016
- 5.17. Woodland L, Smith LE, Webster RK, Amlôt R, Rubin A, Wessely S, Rubin GJ. [Why did some parents not send their children back to school following school closures during the COVID-19 pandemic: A cross-sectional survey](#). *BMJ Paediatric Open* 2021 5(1). Doi: 10.1136/bmjpo-2020-001014
- 5.18. Smith LE, Sim J, Amlôt R, Cutts M, Dasch H, Sevdalis N, Rubin GJ, Sherman SM. [Side effect expectations from COVID-19 vaccination: findings from a nationally representative cross-sectional survey \(CoVAccS – wave 2\)](#). *J Psychosom Res* 2022; 152: 110669. Doi:10.1016/j.jpsychores.2021.110679
- 5.19. Smith LE, Serfioti D, Weston D, Greenberg N, Rubin GJ. [Adherence to protective measures among health care workers in the UK; a cross-sectional study](#). *Emerg Med J* 2022; 39:100-105. Doi: 10.1136/emmermed-2021-211454
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- 5.34. Martin A, Denford S, Love N, Ready D, Oliver I, Amlôt R, Rubin GJ, Yardley L. [Engagement with daily testing instead of quarantine following possible exposure to SARS-CoV-2](#). *BMC Public Health* 2021; 21: 1067. Doi: 10.1186/s12889-021-11135-7
- 5.35. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [Improving ventilation in the home to prevent the spread of COVID-19 \(the COVID-19 Rapid Survey of Adherence to Interventions and Responses \[CORSAIR\] study\)](#). *Environmental Health Insights* 2021; 15: doi 10.1177/11786302211015588
- 5.36. Hodson A, Woodland L, Smith LE, Rubin GJ. [Parental perceptions of COVID-19-like illness in their children](#). *Public Health* 2021; 194: 29-32 Doi: 10.1016/j.puhe.2021.02.013
- 5.37. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. [Adherence to the test, trace and isolate system in the UK: results from a series of 37 nationally representative surveys](#). *BMJ* 2021;372:n608 Doi: 10.1136/bmj.n608
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- 5.43. Smith LE, Amlôt R, Lambert H, Oliver I, Robin C, Yardley L, Rubin GJ. [Factors associated with adherence to self-isolation and lockdown measures in the UK; A cross-sectional survey.](#) *Public Health* 2020; 187:41-52. Doi: 10.1016/j.puhe.2020.07.024
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- 5.48. Michie S, West R, Rogers MB, Bonell C, Rubin GJ, Amlôt R. [Reducing SARS-CoV-2 transmission in the UK: A behavioural science approach to identifying options for increasing adherence to social distancing and shielding vulnerable people](#). *British Journal of Health Psychology* 2020; doi: 10.1111/bjhp.12428
- 5.49. Mantzari E, Rubin GJ, Marteau TM. [Is risk compensation threatening public health in the covid-19 pandemic?](#) *BMJ* 2020; 370:m2913 doi: 10.1136/bmj.m2913
- 5.50. Bonell C, Melendez-Torres GK, Viner R, Rogers B, Rutter H, Whitworth M, Rubin J, Patton G. [An evidence-based theory of change for reducing SARS-CoV-2 transmission in reopened schools](#). *Health Place* 2020; 64: 102398.
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- 5.55. Rubin GJ, Wessely S. [The psychological effects of quarantining a city](#). *BMJ* 2020; 368. doi: 10.1136/bmj.m311
- 5.56. Brooks SK, Smith LE, Webster RK, Weston D, Woodland L, Hall I, Rubin GJ. [The impact of unplanned school closure on children's social contact: Rapid evidence review](#). *Eurosurveillance* 2020 25;13
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- 5.58. Brooks SK, Webster R, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. [The psychological impact of quarantine and how to reduce it: Rapid evidence review](#). *Lancet* 2020;395:912-920.
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**Pre-prints of academic articles that have not been published in an academic journal**

I have not provided a summary for these academic papers. Where the title is not self-explanatory, the hyperlink should provide access to the brief abstract for the paper:

- 5.60. Smith LE, Amlôt R, Lambert H, Oliver I, Robin C, Yardley L, Rubin GJ. Factors associated with self-reported anxiety, depression, and general health during the UK lockdown; A cross-sectional survey. <https://www.medrxiv.org/content/10.1101/2020.06.23.20137901v1>
- 5.61. Smith LE, West R, Potts HWW, Amlôt R, Fear NT, Rubin GJ, Michie S. Knowledge of self-isolation rules in the UK for those who have symptoms of Covid-19: a repeated cross-sectional survey study. doi [pre-print]: <https://doi.org/10.17605/OSF.IO/2E85S>

- 5.62. Lasseter G, Compston P, Robin C, Lambert H, Hickman M, Denford S, Reynolds R, Zhang J, Cai S, Zhang T, Smith LE, Rubin J, Yardley L, Amlôt R, Oliver I. Exploring the impact of shielding advice on the health and wellbeing of individuals identified as extremely vulnerable and advised to shield in Southwest England amid the COVID-19 pandemic: A mixed-methods evaluation. MedRxiv  
<https://www.medrxiv.org/content/10.1101/2022.01.05.21268251v1>
- 5.63. Davies R, Weinman J, Rubin GJ. Observed and self-reported COVID-19 health protection behaviours on a university campus and the impact of a single simple intervention.  
<https://www.medrxiv.org/content/10.1101/2021.06.15.21258920v1>
- 5.64. Smith LE, Sim J, Amlôt R, Cutts M, Dasch H, Amlôt R, Sevdalis N, Rubin GJ, Sherman SM. Psychosocial factors affecting COVID-19 vaccine uptake in the UK: a prospective cohort study (CoVAccS – wave 3). doi [pre-print]: <https://doi.org/10.1101/2022.03.25.22272954>
- 5.65. Davies R, Martin AF, Smith LE, Mowbray F, Woodland L, Amlôt R, Rubin GJ. The impact of “freedom day” on COVID-19 health protective behaviour in England: An observational study of hand hygiene, face covering use and physical distancing in public spaces pre and post the relaxing of restrictions doi [pre-print]: <https://osf.io/twgbf>

#### **Blog posts and published reports**

- 5.66. Rubin GJ. [Is this cough a cold, or is it COVID-19](#). In EPR HPRU annual review, 2022. King's College London: London: This chapter summarises published work by my team exploring how people understand whether their symptoms necessitate taking a test.
- 5.67. EPR HPRU. [Rapid research for the COVID-19 response. The role of the Emergency Preparedness and Response HPRU](#). 27 July 2020. London; King's College London: This report summarises the contribution of the HPRU to the COVID response, up to mid-2020, in terms of support to SAGE and the initiation of multiple studies.

- 5.68. Potts HWW, Amlôt R, Fear NT, Michie S, Smith LE, Rubin GJ. [Rapid research in a pandemic: Foresight, preparedness and collaboration](#). BMJ Opinion 1 April 2021: This blog post on the BMJ website explains our experiences in getting the CORSAIR project up and running.
- 5.69. Rubin GJ, Brainard J, Hunter P, Michie S. [Are people letting down their guard too soon after COVID-19 vaccination?](#) BMJ Opinions 18 March 2021: This blog post on the BMJ website pulls together three pieces of evidence from recent studies and flags a concern that people may be dropping their guard too quickly after vaccination.
- 5.70. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Coronavirus: vaccine misinformation and the role of social media](#). 14 December 2020. London: King's College London.
- 5.71. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Coronavirus: how the UK views vaccines](#). 10 December 2020. London: King's College London.
- 5.72. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [The UK government's handling of the coronavirus crisis: public perceptions](#). 6 December 2020. London: King's College London.
- 5.73. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Compliance or complacency? Attitudes to UK lockdown rules](#). 1 December 2020. London: King's College London.
- 5.74. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Coronavirus conflict: how the pandemic has fuelled anger and confrontation](#). 29 October 2020. London: King's College London.
- 5.75. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [The coronavirus crisis: who has been and who will be most affected?](#) 23 August 2020. London: King's College London.



- 5.76. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [The future under coronavirus: long-term changes and immediate expectations.](#) 16 August 2020. London: King's College London
- 5.77. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Coronavirus uncertainties: vaccines, symptoms and contested claims.](#) 9 August 2020. London: King's College London
- 5.78. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Becoming "covid-secure": how the UK is getting used to wearing face masks and other precautionary behaviours.](#) 30 July 2020. London: King's College London
- 5.79. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Coronavirus fallout: blame, trust and the future of the UK.](#) 28 July 2020. London: King's College London
- 5.80. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Covid conspiracies and confusions.](#) 18 June 2020. London: King's College London
- 5.81. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [The trusting, the dissenting and the frustrated: how the UK is dividing as lockdown is eased.](#) 7 June 2020. London: King's College London
- 5.82. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [Getting used to life under lockdown? Coronavirus in the UK.](#) 29 May 2020.
- 5.83. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Smith L, Strang L, Wessely S. [How the UK is sleeping under lockdown.](#) 4 June 2020. London: King's College London.
- 5.84. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Strang L, Wessely S. [Coronavirus: growing divisions over the UK government's response.](#) 26 May 2020.

- 5.85. Duffy B, Allington D, Beaver K, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Skinner G, Strang L, Wessely S. [Life under lockdown](#). 9 April 2020. London: King's College London.
- 5.86. Duffy B, Allington D, Meyer C, Moxham-Hall V, Murkin G, Rubin J, Strang L, Wessely S. [The accepting, the suffering and the resisting: the different reactions to life under lockdown](#). 27 April 2020. London: King's College London.
- 5.87. The Duffy et al. reports cited above are slide-decks that highlight findings from a series of opinion polls conducted by the King's College London Policy Institute. These focused on how members of the public were thinking about, and responding to, changes relating to the pandemic.
- 5.88. West R, Michie S, Amlôt R, Rubin GJ. [Don't touch the T-zone – how to block a key pathway to infection with SARS-CoV-2](#). BMJ Opinion 3 April 2020: This BMJ blog considers one of the behaviors recommended at the time (not touching your face) in detail and discusses how the application of behavioral science could help people achieve this.
- 5.89. Michie S, West R, Amlôt R, Rubin GJ. [Slowing down the covid-19 outbreak: changing behaviour by understanding it](#). BMJ Opinion 11 March 2020: This BMJ blog considers various behaviors recommended to reduce the risk of catching COVID-19, and discusses how the application of behavioral science could help people adhere to them.
- 5.90. Smith LE, Yardley L, Michie S, Rubin J. [Should we wave goodbye to the handshake?](#) BMJ Opinion 10 March 2020: This BMJ blog notes that reducing handshaking might have direct and indirect benefits during a pandemic (reducing contact and reminding people about the benefits of hand hygiene) and concludes that "if the handshake is to be discouraged during the covid-19 outbreak, clear messaging from public health officials will be required."
- 5.91. Michie S, Rubin J, Amlôt R. [Behavioural science must be at the heart of the public health response to covid-19](#). BMJ Opinion 28 February 2020: This BMJ blog makes explicit the wide range of behaviors that members of the public are being asked to engage in.

**Reports produced by CORSAIR (see also CORSAIR)**

- 5.92. The papers below are reports arising from the CORSAIR project. These contain rapid analyses of polling data collected by DHSC, focusing on the specific issues mentioned in the titles. In each case, the report was uploaded to a sharepoint that was available to SPI-B participants and shared with a stakeholder who had a particular interest in the topic (usually DHSC). The reports were often developed into peer-reviewed academic publications:
- 5.93. [Worry, behaviour and stigma following UK Government communications during the COVID-19 outbreak: results from three UK surveys](#) (Shared with DHSC, 24 February 2020)
- 5.94. [Worry, recommended behaviours and stigma. Wave 4 – 17th to 20th February 2020](#) (Shared with DHSC, 26 February 2020)
- 5.95. [Vulnerable populations. Wave 6 – 2nd to 5th March 2020](#) (Shared with DHSC, 9 March 2020)
- 5.96. [Key information sources, by wave](#) (Shared with DHSC, 17 March 2020)
- 5.97. [Hand hygiene behaviours – impact of handwashing campaign](#) (Shared with DHSC, 17 March 2020)
- 5.98. [Vulnerable populations. Wave 7 – 9th to 11th March 2020](#) (Shared with DHSC, 17 March 2020)
- 5.99. [Symptom knowledge and intentions when ill](#) (Shared with DHSC, 18 March 2020)
- 5.100. [Self-reported adherence to social distancing measures](#) (Shared with DHSC, 3 April 2020)
- 5.101. [Self-reported adherence to self-isolation](#) (Shared with DHSC, 7 April 2020)
- 5.102. [Handwashing behaviours](#) (Shared with DHSC, 9 April 2020)
- 5.103. [Symptom identification and associated factors](#) (Shared with DHSC, 9 April 2020)
- 5.104. [Changes in behaviour if you think you have ever had coronavirus or have had it confirmed by a test](#) (Shared with DHSC, 14 April 2020)



- 5.105. [Keeping well physically and psychological wellbeing during the Government “lockdown”, and impact on adherence to social distancing measures](#) (Shared with DHSC, 20 April 2020)
- 5.106. [Psychological wellbeing and self-reported general health](#) (Shared with DHSC, 7 May 2020)
- 5.107. [Self-reported adherence to self-isolation and social distancing measures](#) (Shared with DHSC, 11 May 2020)
- 5.108. [Personal protective behaviours in NHS workers](#) (Shared with NHS England, 14 May 2020)
- 5.109. [Symptom prevalence](#) (Shared with SPI-B, 22 May 2020)
- 5.110. [Ethnicity, COVID-19-related behaviours, attitudes and outcomes](#) (Shared with DHSC, 4 June 2020)
- 5.111. [Public perceptions of a COVID-19 tracking app](#) (Shared with DHSC, 8 June 2020)
- 5.112. [Factors associated with uptake of the Test, Trace and Isolate \(TTI\) system](#) (Shared with DHSC, 12 June 2020)
- 5.113. [Physical distancing and related behaviours: changes over time](#) (Shared with DHSC, 16 June 2020)
- 5.114. [Public perceptions of a COVID-19 tracking app](#) (Shared with DHSC, 13 July 2020)
- 5.115. [Factors associated with requesting an antigen test and self-isolating after developing symptoms of coronavirus](#) (Shared with DHSC, 14 July 2020)
- 5.116. [Adherence to the test, trace and isolate system \(CORSAIR study\). \(Shared with SAGE, 3 September 2020\).](#)
- 5.117. [Annex to Evidence summary of impacts to date of public health communications to minority ethnic groups and related challenges. \(Annex to Report by Ethnicity Subgroup of SAGE, 23 September 2020\)](#)
- 5.118. [Socialising indoors and outdoors](#) (Shared with inform [Nervtag paper](#), 20 October 2020)

- 5.119. [Use of the NHS COVID-19 App](#) (Shared with DHSC, 2 November 2020)
- 5.120. [Clusters of behaviours and adherence](#) (Shared with DHSC, 5 November 2020)
- 5.121. [Ventilation](#) (Shared with SPI-B and EMG, 25 November 2020)
- 5.122. [Clusters of self-reported behaviours and adherence in those who had COVID-19 symptoms](#) (Shared with DHSC, 4 December 2020)
- 5.123. [Workplace attendance in people able to work and factors predicting it: evidence from cross-sectional surveys.](#) (Shared with SAGE 4 February 2021)
- 5.124. [Factors associated with vaccine hesitancy](#) (Shared with SPI-B, 10 March 2021)
- 5.125. [Impact of vaccination on adherence to rules and guidance about personal protective behaviours \(PPBs\) and social distancing](#) (Shared with DHSC, 13 April 2021)
- 5.126. [Impact of attitudes and beliefs about COVID-19 on adherence to rules and guidance about personal protective behaviours \(PPBs\) and social distancing](#) (Shared with DHSC, 7 May 2021)
- 5.127. [Who is engaging with COVID-19 testing?](#) (Shared with DHSC, 14 June 2021)
- 5.128. [Recognition of symptoms of COVID-19](#) (Shared with PHE, 14 June 2021)
- 5.129. [Graphs of validated measures \[PHQ4, SWEMWS, AUDIT-C\]](#) (Shared with DHSC, 23 June 2021)
- 5.130. [Impact of vaccination on adherence to rules and guidance about personal protective behaviours \(PPBs\) and social distancing](#) (Shared with DHSC, 25 June 2021)
- 5.131. [Do members of the public think they should use lateral flow tests or PCR tests when they have COVID-19-like symptoms? The COVID-19 Rapid Survey of Adherence to Interventions and Responses \[CORSAIR\] study.](#) (Shared with DHSC, 28 June 2021)
- 5.132. [Changes in behaviour following 19 July 2021](#) (Shared with DHSC, 6 August 2021)
- 5.133. [Risky social mixing](#) (Shared with DHSC, 9 August 2021)
- 5.134. [Risky social mixing – age in bands](#) (Shared with DHSC, 18 August 2021)

- 5.135. [Testing when symptomatic, and staying at home with influenza-like illness, during autumn and winter 2021](#) (Shared with SAGE, 30 September 2021)
- 5.136. [Agency and risk - impact on adopting protective behaviours](#) (Shared with DHSC, 5 November 2021)
- 5.137. [At risk groups](#) (Shared with SPI-B Chairs, 21 December 2021)
- 5.138. [The COVID-19 Rapid Survey of Adherence to Interventions and Response\(CORSAIR\) study: Final report.](#) (Shared with DHSC, 22 June 2022)

**Main interviews and statements to the media**

- 5.139. [Press release relating 'risk compensation'](#). (King's College London, 27 July 2020). This press release related to the paper in paragraph 5.49 above. The headline statement was that "existing limited evidence suggests that wearing face coverings to protect against COVID-19 does not lead to a false sense of security and is unlikely to increase the risk of infection through wearers foregoing other behaviors such as good hand hygiene."
- 5.140. [Press release relating to self isolation.](#) (King's College London, 9 September 2020). This press release related to the paper at paragraph 5.43 above. The headline statement was that "during the UK lockdown period, people who received support from outside their home were more likely to adhere to self-isolation when there were symptoms of cough or fever within their household."
- 5.141. [Interview with the Telegraph relating to self-isolation](#) (Telegraph, 24 September 2020). Interview flagging the need for people to receive support while self-isolating.
- 5.142. [Interview with the Financial Times relating to self-isolation](#) (Financial Times, 24 September 2020) Interview flagging the need for people to receive support while self-isolating
- 5.143. [Interview with the Telegraph relating to self-isolation](#) (Telegraph, 18 October 2020) Comments given to clarify the nature of some data from CORSAIR relating to adherence to self-isolation, that had been referred to by the Scottish Government



- 5.144. [Press release relating to public anger during the pandemic](#) (King's College London, 29 October 2020). This press release related the paper mentioned at paragraph 5.44 above. The headline statement was that "The easing of lockdown revealed anger and arguments about the Covid-19 crisis among people in the UK, even leading to some no longer being on speaking terms with family and friends and to confrontations between members of the public."
- 5.145. [Press release relating to perceived immunity to coronavirus](#) (King's College London, 4 November 2020). This press release related to the paper mentioned at paragraph 5.42 above. The headline statement was that "new research from King's College London reveals an individual's beliefs about whether or not they'd had COVID-19 influenced how likely they were to follow lockdown rules early in the pandemic."
- 5.146. [Interview with the Guardian relating to testing](#) (Guardian, 1 April 2021). Interview flagging that rates of testing were low, but improving.
- 5.147. [Press release relating to test, trace and isolate](#) (King's College London, 31 March 2021). This press release related to the paper mentioned at paragraph 5.37 above. The headline summary was that "levels of adherence to the UK's test, trace, and isolate system, and people's understanding of the main symptoms of COVID-19 are low."
- 5.148. [Comment via Science Media Centre on self-isolation statistics](#) (Science Media Centre, 15 April 2021). The comment noted that ONS recorded rates of self-isolation were good news, but that "we do need to be a little careful in how we interpret the results."
- 5.149. [Interview with the Guardian relating to the future role of SPI-B](#) (Guardian, 17 September 2021). Comments given to note that SPI-B was still active, but that "in my view, it would be odd if a group intended to provide rapid advice as an emergency measure was still the primary way the government was getting behavioral science input 18 months down the line."
- 5.150. Ann John, Brooke Rogers, James Rubin, Lucy Yardley. [SPI-B Unspun](#). Letter to the Editor, Private Eye, Eye 1571, 15-28 April 2022. Letter noting that SPI-B had advised against the use of fear in communication on multiple occasions and for the use of "protect each other" messages.

**Evidence given to Select Committees**

5.151. [Oral evidence to the House of Commons Science and Technology Committee](#),  
16 April 2020.

5.152. [Oral evidence to the House of Commons Science and Technology Committee](#),  
17 February 2021.

**6: Views as to whether the work of the groups in responding to the Covid-19 pandemic succeeded in its aims.**

**The composition of the groups**

6.1. The participant list for SPI-B grew over time. By the end of the process, it included people with expertise in:

- Health psychology
- Social psychology
- Sociology
- Anthropology
- History
- Public policy
- Communications
- Behavioural economics
- Health economics
- Child and adolescent health
- Clinical psychology / mental health
- Health protection / public health
- Ethics
- Law, policing and criminology
- Epidemiology / modelling

- 6.2. The Meetings were also attended (as observers, or as independent experts) by representatives from other behavioural science related groups within Government to allow us to understand what additional data might exist or what nuances or considerations we needed to be cognisant of. Behavioural science and communications teams in Government regularly commissioned or conducted their own polling, focus groups, ethnography, field trips, experiments and literature reviews and disseminated policy briefs based on their findings – including representatives in our meetings helped provide us with a better overview.
- 6.3. I believe the range of expertise that we had available was broadly adequate to meet SPI-B's objectives, which focussed on the behavioural drivers of the pandemic and the impact of policies or interventions on behaviour. Given that other groups within government existed to provide advice on issues such as epidemiology (SPI-M), ethics (the [Moral and Ethical Advisory Group](#) for DHSC) and economics (the Treasury), I believe we were right not to seek to duplicate the expertise in those groups: indeed, our Terms of Reference specifically noted that "questions of proportionality and value for money of policy options are outside of the group's remit," which placed an additional boundary around the type of expertise we required.
- 6.4. To tackle some issues, we might have benefitted from more expertise. For example, it has been suggested to me in retrospect that expertise in human geography might have been helpful for work relating to 'local lockdowns.' It was also apparent early on that the Group lacked sufficient diversity in terms of gender and ethnicity: we made efforts during a refresh of the participant list to correct this.

**The way in which the groups were commissioned to work on the relevant issues**

- 6.5. I largely have experience in terms of how SPI-B worked. From my point of view, I believe commissioning worked well. Two points might be useful to mention. Neither are particularly major issues. Both relate to the "emergency" remit of the group.



- 6.6. First, there were occasions where I felt that timelines for work were unnecessarily short. On some occasions, particularly once the immediate crisis of February / March 2020 had stabilised, I wondered if a short timeline for a paper was perhaps driven by a desire to meet some internal Government deadline, rather than because the evolving nature of the emergency demanded it. It might be reasonable to request civil servants to respond quickly on this basis. I did not believe it would be reasonable to ask a group of volunteer academics to do so.
- 6.7. Second, there were some instances where I felt SPI-B was being asked to comment on issues that could not be construed as an emergency. The group was set up to provide the best advice it could, as quickly as it could, in the context of a rapidly evolving crisis. My view was that it would be better if advice that could be provided in slower time was commissioned via an alternative and more conventional route. On occasion, I felt that SPI-B was being asked to provide advice that should have been commissioned elsewhere. This was usually dealt with straightforwardly through the intervention of the secretariat and / or chairs. 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.

**The resources and support that were available**

- 6.8. The secretariat from SAGE provided substantial, round-the-clock support to the participants. Requests for help from participants were actioned immediately and without fuss, seemingly at any time of the day or night.
- 6.9. The support provided in terms of media support, wellbeing support and advice on personal security was appreciated. The offer of funding to some participants who spent many hours working on SAGE business in order to provide backfill (e.g. to pay for a teaching assistant to help mark university essays) was helpful.
- 6.10. Three other particularly welcome aspects of support are worth highlighting. First, we were rapidly overwhelmed with the sheer volume of academic papers, commentaries, reviews and so forth that were being produced – as of 14 September 2022, Scopus (a scientific database) lists over 400,000 academic

papers relating to COVID-19. The UKHSA set up a weekly literature report, freely available to anyone who subscribed, which compiled a list of the new behavioural science papers that they considered noteworthy – this was very helpful. Second, a team attached to the Cabinet Office set up a weekly behavioural situation report that was circulated within Government. This summarised the key metrics that were being assessed (e.g. google mobility trends, number of tests taken, self-report metrics from surveys). Third, the Government Office for Science employed an “embedded scientist” to work with SPI-B. This was a position for a skilled researcher who helped the group with, for example, conducting rapid evidence reviews. The position was held by three people during the outbreak, and we were very grateful for their support.

**The advice given and/or recommendations that were made**

- 6.11. I can only comment on advice and / or recommendations within the field of behavioural science.
- 6.12. Within SPI-B, papers were often requested with a very short timeline. A request with a 48hr deadline was not unusual, particularly early on. Deadlines of less than 24hrs also occurred. Sometimes, several urgent papers needed to be written at the same time. There may be elements within papers that, with the benefit of more time to think, read and consult colleagues, would have been expressed more clearly, be better referenced, provide additional nuance or highlight extra considerations. However, the core aim of SAGE and SPI-B was to answer urgent questions from the Government to deadline and to the best of our abilities. I believe it met that aim.
- 6.13. However, a persistent issue raised by the group was the lack of feedback on our papers from Government. Occasionally we heard that our report had been “well received,” but we rarely, if ever, received specific feedback on whether it was useful, any aspects that were not clear, how it aligned with other considerations within Government or any other aspects. The group were often in the dark as to what, if any, impact our work was having.

**The extent to which the groups worked effectively together**

- 6.14. The groups within SAGE worked together well. Where interdisciplinary working groups were formed to tackle specific issues, the resulting papers were, in my

opinion, useful. The only exception to this I would note is that, on rare occasion, participants from outside SPI-B commented about a behavioural science matter: I did have occasion to challenge some instances of this “lay” behavioural science.

- 6.15. Participants within groups also worked together well. Within SPI-B we invited the director of policy for the British Psychological Society to attend meetings as a semi-independent observer. She observed our sessions and asked participants to contact her in confidence with any feedback. While she made several useful suggestions (e.g. whether we were clear on our remit and around how best to reconfigure the group), she did not report any urgent or major issues.
- 6.16. Two challenges within SPI-B may be worth raising. First, over time, SPI-B grew in size. The original intention was that people should not feel obliged to attend meetings if the topic to be discussed fell outside their area of expertise. In practice, it was common for everyone to attend every meeting. As a result, meetings slowly became harder to chair, and the sense between the co-chairs was that some people found it difficult to contribute, while others were deliberately limiting their contribution so as to provide time for other people to speak. This triggered our move to a new system in which a co-ordinating group (set up to ensure a diversity of expertise) met to discuss commissions and to set-up working groups from a pool of experts to tackle them.
- 6.17. Second, a challenge for SPI-B was how to engage with the media. 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.

**The extent to which applicable structures and policies were utilised and/or complied with and their effectiveness**



6.18. I am not clear what specific structures or policies are being referred to. I do not have any particular comments.

## **7: Lessons that can be learned**

7.1. SAGE made a mistake in not being more open in the early stages of the pandemic. Openness is beneficial in terms of maintaining public trust and in allowing colleagues from outside the system to peer review advice, offer new evidence, and develop studies to tackle uncertainties. This has now been corrected.

7.2. In my view, other arms of Government should also be more open. There were several teams working on behavioural science within Government. These include:

- a. The Behavioural Insights Team;
- b. The Government Communication Service;
- c. The Department of Health & Social Care communications team;
- d. The Public Health England / UKHSA communications team;
- e. The behavioural science team in PHE / UKHSA's Emergency Response Department;
- f. Various NHS Test and Trace advisory and working groups that focussed on large events, self-isolation and testing uptake.

7.3. SPI-B actively pushed for its advice to be published on the SAGE [website](#) (and [elsewhere](#) when this was not possible). What advice was provided by other sources was less clear. I am sure this applies just as much to many other, non-behavioural science sources of advice. Much evidence produced by other groups within Government was labelled as "Official Sensitive" which led to some confusion as to whether we could cite such reports in SPI-B documents, given that SPI-B papers would be published. My sense is that Official Sensitive labelling was over-used.

## **8: Documents that I hold**

8.1. I hold around 7,500 emails containing the word "SAGE," 6,400 containing the word "SPI-B" and 1,700 containing the word "NERVTAG." Many include

attachments of various documents, spreadsheets, power point presentations and so on in various stages of preparation.

8.2. I have approximately 270 files held electronically which relate in some respect to the work of SAGE, including copies of minutes and published papers, drafts, partial notes relating to my input to meetings, agenda, presentations, research material, and other similar files. These documents include summaries that I prepared in anticipation of the Inquiry which document:

- comments that I was privy to via SAGE minutes and papers, public statements and email correspondence in relation to the public's ability to maintain adherence to interventions;
- a lengthy and (I believe) comprehensive list of what SAGE and SPI-B said in terms of communicating with the public;
- a summary of what SPI-B said about the use of international evidence in the run-up to lockdown;
- an initial (abandoned) attempt to document in a word document everything that SPI-B said about self-isolation in one place.
- Draft notes, intended to form the basis of a future statement to the Inquiry if required.

8.3. I have a small number of whatsapp and SMS messages with SAGE secretariat members and some SAGE / SPI-B participants.

8.4. I have hard copies of some of the messages and documents mentioned above, including:

- a draft of policy options for the PM dated 10 March and SPI-B comments on them;
- SPI-B note: Current adherence to behavioural and social interventions in the UK: Comments from SPI-B [22 March 2020];
- Maximising take up and effective sustained use of the App (Discussion paper for SPI-B: 23/3/2020);

- SPI-B note: Options for increasing adherence to social distancing measures 22<sup>nd</sup> March 2020;
  - School closure: Note from SPI-B 17 March 2020;
  - The role of behavioural science in the coronavirus outbreak;
  - SPI-B: Insights on self-isolation and household isolation, 9 March 2020
  - SAGE return to CCS on risk of public disorder 25 February 2020;
  - SPI-B return to SAGE on the use of behavioural and social interventions on a COVID-19 epidemic in the UK 3 March 2020;
  - SPI-B comments on combined behavioural and social interventions;
  - Potential impact of behavioural and social interventions on an epidemic of Covid-19 in the UK 9 March 2020;
  - A draft slide summarising SPI-B advice on the risk of public disorder;
  - Antibody tests: Note on misclassification, misunderstanding, misuse and mitigation to realise benefits and minimise harms. Note from SPI-B 1 April 2020;
  - Easing restrictions on activity and social distancing: comments and suggestions from SPI-B (1 April 2020);
  - SPI-B notes on public gatherings (12 March 2020)
  - A log of meetings I attended and input that I made that I kept from January 2020 to 15 March 2020
- 8.5. Many of the documents that I hold are labelled Official Sensitive (although a large number of those have already been published on-line).