Witness Name: Julie Maxton
Statement No.: M1/RS/01
Exhibits:
Dated:4/05/23

UK COVID-19 INQUIRY

WITNESS STATEMENT OF Julie Maxton

I, Julie Maxton, speaking on behalf of the Royal Society, offer the following evidence: -

1. The Royal Society is a registered charity, learned society and the UK's national academy of science. Founded in the 1660's by King Charles the Second, the Society's mission reflected in its founding charters is to recognise, promote and support excellence in science and to encourage the development and use of science for the benefit of humanity.
2. The Society's work is UK-wide and it engages with individuals and institutions internationally. The Society recognises scientific excellence through its fellowship network and additionally funds and publishes scientific research.
3. As a national academy, the Society represents the UK research community and collaborates with international partners to advocate for science and its benefits. It provides authoritative and independent advice on matters of science that support the public good.
4. The Royal Society provides objective and independent scientific evidence across a broad range of research areas. The Society presents this information in reports and associated publications which are freely available and specifically shared with diverse stakeholders at our events.
5. The Royal Society does not make policy decisions. The Society's views are based on evidence and analysis and serve as a reliable source of the current state of scientific knowledge. As such the Society's outputs are a useful source of scientific evidence for consideration by policymakers alongside other considerations. Some

of our publications offer evidence-based recommendations which policymakers may also consider as part of decision-making. Consequently, I can answer questions where we have evaluated evidence and analysis, by articulating our findings and setting out the range of publications we have produced to present this evidence. As the Society bases its views on scientific evidence and analysis, I am not able to offer views where we have no evidential basis for doing so.

6. The Royal Society is one of many organisations who engage the UK government providing evidence and analysis relevant to policy decision-making. We are unsighted though on Government's decision-making processes and the various sources of evidence and judgments that contribute to these, so I am unable to demonstrate a causal link between information we have provided to the government and policy decisions or actions subsequently taken.
7. To accompany my response, I have provided key publications relevant to the questions asked. I have also provided key correspondence between Royal Society staff and stakeholders in the UK government.
8. Documentation and key correspondence between the Royal Society and UK government was identified through application of a methodology using search terms set out in the received questions. Namely correspondence and documentation relating to "emergency and pandemic planning," "preparedness" and "resilience" in the context of the Covid-19 pandemic. This response and the accompanying evidence present to the best of my ability a thorough representation of the Royal Society's activities that could reasonably be assembled within the time allowed for this request.
9. The Royal Society has not conducted an extensive historical examination or analysis of the UK's emergency and pandemic planning, preparedness, and resilience capability prior to 21st of January 2020. Consequently, on behalf of the Royal Society I am unable to present an evidence-based view on the general state of UK emergency and pandemic planning, preparedness, and resilience, what was done adequately or what could have been done better. Further, I am unable to offer a view on whether the state of emergency planning and resilience was in general adequate considering pre-existing inequalities and population vulnerabilities.

10. The Royal Society did however comment to the UK government prior to 21st January 2020 in broadly related areas. Regarding emergency planning, preparedness and resilience, the Royal Society conducted evidence gathering and analysis in relation to extreme weather.
11. A 2014 report from the Royal Society entitled "Resilience to extreme weather" (JM2 -INQ000148009) set out extreme weather events, what they are, their impact and how trends may develop in the future in the context of climate change. The report presents a framework of risk and adaptive management and sets out a series of case studies. The report made a series of recommendations relating to resilience and emergency preparedness for extreme weather events. This report was shared with Government. In June 2015, the Royal Society brought together international disaster risk experts to discuss the role of the scientific community supporting delivery of the Sendai framework.
12. Additionally, between the 11th of June 2009 and 21st of January 2020 the Royal Society was signatory to a series of join Science Academies statements directed variously to the G7 and G20 commenting on areas related to resilience and emergency capability (JM1-INQ000147903, JM3-INQ000148033, JM4-INQ000148044). These statements were all sent to HMG, variously to Cabinet Office, BEIS, and others.
13. Of those, the 2012 statement (JM1- INQ000147903) focused on building resilience to disasters of natural and technological origin. The statement emphasised the cost of disasters, the principles of resilience and how the international community may work to build greater resilience. The statement recommended repeated surveillance and capacity building, improvement of public health systems and integrating resilience capacity into international developmental assistance.
14. On a related theme the 2016 statement (JM3- INQ000148033) highlighted how disaster resilience is essential to sustainable development. The statement set out six actions to increase resilience to disasters including developing metrics to quantify vulnerability and resilience, building data structures to support prediction of future events, and promoting the sharing of information between nations to support best practice and identify lessons learned from disasters.
15. The 2017 statement (JM4- INQ000148044) to the G20 science dialogue was focused on improving global health by combatting communicable and non-

communicable diseases. The statement recommended action by nations to provide resilient and reliable health systems, address determinants of health and develop global surveillance strategies to track and control disease outbreaks.

16. Following the emergence of Covid-19 and its spread as a global pandemic, in April 2020 the Royal Society co-signed a joint Science Academies statement (JM16-INQ000147970) noting the need for international cooperation during the Covid-19 pandemic. The statement emphasised the need for rapid, accurate and transparent information sharing related to the virus's spread, transmission, mutation as well as development of medical products.
17. The Royal Society also established a series of work areas to gather and analyse evidence relevant to the UK's emergency and pandemic response. These groups are summarised below.
18. **DELVE (Data Evaluation and Learning for Viral Epidemics):** Established as a multi-disciplinary research group which aimed to provide evidence and analysis that could support the UK government's strategic response. The DELVE programme analysed national and international data to determine the effect of different measures on public health, social and economic outcomes. DELVE used new data as it came to light over the pandemic and acted to communicate DELVE analysis nationally (to the UK government) and internationally. The DELVE programme produced a range of open access outputs including:

19. Global Covid-19 dataset: Which consolidated data from 170 countries worldwide on Covid-19 cases, deaths, and tests among other parameters.
20. Test, trace and isolate explorer simulations software: Which Investigated the impact of test, trace isolate and social distancing strategies on Covid-19 spread in the UK.

21. Additionally, all DELVE outputs, including analysis on face masks for the public (JM27- INQ000148030 and JM85- INQ000148094), testing, tracing, and isolation (JM48- INQ000148053) and vaccine development and implementation (JM126-INQ000147933) were shared with SAGE (Science Advisory Group for Emergencies). DELVE also facilitated a red-teaming exercise with a variety of diverse experts, for the Boston Consulting Group, who were preparing modelling for the Department for Health and Social Care's early Test and Trace activities.

22. **RAMP (Rapid Assistance in Modelling the Pandemic):** This group brought together modelling expertise from a diverse range of disciplines to support the pandemic modelling community already working on Coronavirus (COVID-19). It also provided support to SPI-M and stood up a rapid review group which provided the government critique of the methodology and findings of new modelling within 48 hours. Accompanying this RAMP facilitated a series of knowledge sharing events hosted by the Isaac Newton Institute at the University of Cambridge.
23. **SET-C (Science in Emergencies Tasking-Covid):** SET-C aimed to use the expertise of the Society's fellowship network to rapidly convene expertise to respond to governmental requests relating to Covid-19 with science advice and on occasion to provide knowledge on topics which the expertise on SET-C deemed important to pass on to SAGE. Between June 2020 and February 2021 SET-C published a series of rapid reviews covering amongst other areas: advice on face masks for the public including behavioral messaging (JM75- INQ000148083), evidence on the reproduction number (R) and growth rate of Covid-19 in the UK (JM110- INQ000147916), advice on long Covid (JM136- INQ000147944) and criteria for the development and use of Covid-19 vaccine passports (JM165- INQ000147976). All advice was provided to Patrick Vallance.
24. In August 2021, the Royal Society co-signed a joint Science Academies statement on the need for improved data readiness for future health emergencies (JM155- INQ000147965). The statement identified health data as a global public good highlighting what would be needed to integrate data further into future health emergencies. The statement noted actions governments could take including establishing robust governance structures, data infrastructure developments and fostering skills in data-informed decision-making. This was shared with the UK Government.
25. The Royal Society's publications, both prior to and following the 21st of January 2020, including the joint Academies statements, the full list of SET-C, DELVE and RAMP publications and key correspondence between the Royal Society and government stakeholders are provided to accompany this response. The Royal Society's engagements with SAGE are detailed in the SAGE meeting minutes. Since these are owned by HMG, government stakeholders will provide them. Additionally, the Royal Society through its publishing, archiving and press teams

communicated to the public and other non-governmental organisations regarding the Covid pandemic. This evidence is provided in a timeline accompanying this response (JM1- INQ000147903 to JM212- INQ000148024).

26. Regarding the subject areas raised for the period prior to and following the 21st of January 2020 the Royal Society holds the view that there was adequate engagement and appropriate communication between the Royal Society and individuals across the departments comprising the UK government.
27. The Royal Society has not conducted extensive retrospective analysis of decision-making related to the UK governments Covid-19 response, and we are unsighted on the range of evidence and judgments used in decision-making so I am unable to offer an evidence-based view on whether specific decisions should have been made differently.
28. At present the Royal Society is conducting research to understand whether non-pharmaceutical interventions including amongst others mask wearing, lockdowns, international travel restrictions and testing were effective at preventing the transmission of Covid-19. This work considers global evidence from a range of published sources and will set out current understanding on whether non-pharmaceutical interventions were effective or not.
29. Alongside this the Royal Society had undertaken research on attitudes in the UK to the use of data for emergencies. In this context in February 2023 the Royal Society published a report (JM212- INQ000148024) on the use of data in emergency situations which makes a series of recommendations relevant to future preparedness. The Royal Society was also involved in the inception of a collaboration of data-focused organisations (the Global Pandemic Data Alliance) meeting the challenge of establishing health data as a global public good and improving data readiness internationally ahead of future health emergencies.
30. In terms of lessons learned, I offer a general statement as to the remarkable pace at which vaccines were developed, alongside other very rapid significant scientific contributions to public health. These depended on consistent investment in basic research going back many decades. The rapid sharing internationally of the viral sequence and its variants for example, is underpinned by the discoveries of DNA and RNA in the 1960s, and sequencing technologies accelerated by the human genome project. The PCR (Polymerase Chain Reaction) reaction used in

surveillance and rapid testing originates from a DNA polymerase protein from basic research in the 1960s and 70s. The lipid delivery vehicle for mRNA vaccines is underpinned by the discovery of liposomes in the 1960s. The structure of proteins, viruses and antibodies is similarly based on a vast body of discovery and knowledge going back decades. Science can achieve remarkable public health outcomes. A critical lesson though is that the science needed to develop rapid solutions to future emergencies of all kinds, depends on decades of consistent investment in basic research, and that such investment is a central pillar of national and international resilience.

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:4/05/23