Witness Name: Wei Shen Lim
Statement No.: 1
Exhibits: WSL/1 to WSL/26
Dated: 7 June 2023

UK COVID-19 INQUIRY

DRAFT WITNESS STATEMENT OF WEI SHEN LIM

I, Wei Shen Lim, of Nottingham University Hospitals NHS Trust, City Hospital Campus, Nottingham NG5 1PB, will say as follows:

1. I am employed by Nottingham University Hospitals NHS Trust as a Consultant Respiratory Physician. I have held this position since 2003. I am also an Honorary Professor of Respiratory Medicine for The University of Nottingham and have held this position since 2015.
2. I make this statement in response to a Request for Evidence under Rule 9 of the Inquiry Rules 2006, that I received from the UK Covid-19 Public Inquiry ("the Inquiry") dated 20 January 2023, requiring me to provide a witness statement in respect to my experience and knowledge so far as it is relevant to the Inquiry's Module 1 assessment of the Covid-19 Pandemic ("the Module 1 Request").
3. Per the Module 1 Request, I will address the matters of interest to the Inquiry during the period 11 June 2009 to 21 January 2020 ("the Inquiry's Module 1 Timeframe"). Where a matter is of interest but falls outside of this date range, I will make this clear and explain why it is relevant the Inquiry's assessment of Module 1.
4. To the extent that the facts set out within this Witness Statement are within my own knowledge, I confirm that they are true. Where facts and matters are not within my own knowledge, I state their source and confirm that they are true to the best of my information, knowledge and belief.

Section 1: My background

5. I received my Bachelor of Medical Sciences (Hons) from the University of Nottingham in 1989. Following this, I was awarded a Bachelor of Medicine and Bachelor of Surgery

from the University of Nottingham in 1991, Membership of the Royal Colleges of Physicians (London) in 1996, a Doctorate in Medicine in 2002 and Fellowship of the Royal College of Physicians in 2007.

6. I have worked in the medical profession since 1991. In the early 90s I spent four years working abroad in Singapore as a Medical Officer. I returned to the UK in 1997 working in Respiratory Medicine in the East Midlands, until 2003. In 2003, I began my employment with Nottingham University Hospitals NHS Trust as a Consultant Respiratory Physician, a position I still hold today. In 2015, I became an Honorary Professor of Respiratory Medicine for The University of Nottingham, another position I still hold today.
7. During my career I have received multiple awards, including the British Thoracic Society Award for Meritorious Service in 2016. More recently, in 2021 I received the Moxon Medal from the Royal College of Physicians in London, the Honorary Staff Contribution Award from the University of Nottingham School of Medicine, and the Covid-19 Research Heroes Award from the Nottingham University Hospitals NHS Trust.
8. My career has led me to develop a specialism in respiratory infections. Throughout the years, I have been involved in clinical research, guideline development, quality improvement initiatives and educational projects in the field of respiratory infections, including pneumonia, pneumococcal disease, influenza and pandemic preparedness.
9. I have also contributed to many major publications in this field since 2003. I have provided a list as exhibit **WSL/1 - INQ000145978**.

Section 2: Government advisory committees and groups

10. I have participated in multiple UK Government advisory committees and national groups during my career. For example, in 2003, I chaired the national clinical management guideline committee relating to SARS and in 2009 I chaired the British Thoracic Society clinical management guideline committee relating to community acquired pneumonia.
11. I have provided more detailed information below regarding the committees and groups that are relevant to the Inquiry's Module 1.
12. It should be noted that my involvement in these groups is voluntary and not remunerated in any way by the Government, or any other person/company, save for my travel expenses to attend meetings in the UK, mostly in London. My employer

provided prior consent to release me from my NHS clinical duties to attend such meetings.

13. Similarly, involvement in these advisory groups is not associated with provision of any funding to aid any research required to be considered as part of the advisory process.

National Clinical Management Guideline Committee for Pandemic Influenza

14. In 2007, the Department of Health (through NR Senior Medical Officer), now known as Department of Health and Social Care ("DHSC"), commissioned the development of provisional national Clinical Management Guideline for Pandemic Influenza. I was appointed to chair the Guideline Development Group ("GDG"). Due to the passage of time, I cannot remember the details regarding the appointment process.

15. The GDG comprised of approximately 23 members drawn from the British Thoracic Society, the British Infection Society, Paediatric Group specialists, Primary Care Group specialists, the Health Protection Agency and the DHSC. The purpose of the GDG was to develop provisional guidelines for the clinical management of individuals in the event of an influenza pandemic (the "2007 Provisional Clinical Management Guideline") (exhibit **WSL/2 - INQ000145954**).

16. It was recognised by GDG that it was not possible to predict in advance the strain of influenza virus that might be responsible for the next pandemic. The 2007 Provisional Clinical Management Guideline was, therefore, developed for use as a tool for influenza pandemic preparedness planning. It was considered that at the outset of a pandemic, the 2007 Provisional Clinical Management Guideline would need to be rapidly adapted for the specific pandemic strain of influenza, as appropriate. The 2007 Guideline was published in peer-reviewed medical journals 'Thorax' and 'Journal of Infection'; I believe the Department of Health provided funding to these journals to support publication, but I do not know the details of any transactions.

17. In 2009 there was a global pandemic involving the influenza strain H1N1 (specifically the H1N1pdm09 virus), known more widely as the Swine Flu pandemic (the "2009 Pandemic"). I became a member of the advisory group that adapted the 2007 Provisional Clinical Management Guideline to specifically deal with the H1N1 strain (exhibit **WSL/3 - INQ000145955**). I cannot remember the name of the group or how it was set up, but I recall it being put together quickly.

18. Immediately following the 2009 Pandemic, the 2007 Provisional Clinical Management Guideline was not updated as it was viewed as a competent foundation document that could be the basis for future clinical management pandemic planning. The decision to update the 2007 Provisional Clinical Management Guideline was revisited as part of my role with NERVTAG in 2015, discussed in more detail below at paragraphs 44-47.

Pandemic Influenza Clinical and Operational Advisory Group

19. In 2009, when the UK was dealing with the 2009 Pandemic, the Chief Medical Officer ("CMO"), Sir Liam Donaldson, convened a clinical and operational group to advise him accordingly. This group was called the 'Pandemic Influenza Clinical and Operational Advisory Group' ("PICO").
20. I was invited to join PICO as a member, but do not recall interviewing for the position (exhibit **WSL/4 - INQ000145961**). PICO was made up of a mix of clinicians and operational officers. I do not recall the exact number of PICO members involved, likely more than twelve.
21. PICO was active throughout the 2009 Pandemic. As the meeting agendas will show (for example exhibit **WSL/5 - INQ000145956**), PICO was tasked with dealing with the 2009 Pandemic as it was happening in the UK.
22. During this period, I attended approximately 14 meetings. I exhibit the meeting minutes at exhibits **WSL/6.1 - INQ000145966** to **WSL/6.14 - INQ000145976**.
23. I contributed to discussions that ultimately formed part of the advice to the CMO from PICO, but I do not recall discussing planning for future pandemics as part of my role in PICO.

Scientific Advisory Group for Emergencies (SAGE) H1N1

24. At the time PICO was active, another governmental advisory group, known as SAGE H1N1 was enabled. SAGE is a body set up by the Government in a national emergency to provide scientific and technical advice to support government decision makers during emergencies.
25. I was invited to attend a SAGE H1N1 meeting in my capacity as an NHS clinician and member of the PICO group. The meeting I attended was held on 15 June 2009 (exhibit **WSL/7 - INQ000145957**). SAGE H1N1 was later disbanded.
26. I do not believe that PICO reported into SAGE. Rather, these two groups worked independently, but in parallel for the Government, specifically for the purpose of

dealing with 2009 Pandemic; PICO providing clinical and operational advice and SAGE providing scientific and technical advice.

27. My experience with both PICO and SAGE H1N1 is relevant to the work I contributed to future committees in respect to pandemics, however, due to the passage of time I cannot say with certainty which elements of my work within these groups can be linked to the committees.

New and Emerging Respiratory Viral Threats Advisory Group (NERVTAG)

28. In 2014, an advisory group to the CMO was set up called the New and Emerging Respiratory Viral Threats Advisory Group, also known as NERVTAG. I exhibit the NERVTAG Code of Practice for Members at **WSL/8 - INQ000145958.** I joined NERVTAG as one of the founding members, after interviewing for the position. My current membership is due to end in 2023.

29. NERVTAG is structured such that there is:

    a. The main NERVTAG committee, made up of approximately 20 members from multidisciplinary backgrounds (e.g. behaviorists, virologists, animal experts etc.), who meet approximately 2 to 3 times a year in London;

    b. NERVTAG subcommittees are convened as required to address specific topics, such as (1) NERVTAG Subcommittee on Antibiotic Stockpiles; (2) NERVTAG Subcommittee on Pandemic Influenza Vaccines; and (3) NERVTAG Subcommittee on Facemasks and Respirators. The NERVTAG members with the most relevant experience to the subcommittee purpose contribute as subcommittee members and meet as frequently as needed throughout the year.

30. I sit on the main NERVTAG committee and am the Chair of the NERVTAG Subcommittee on Antibiotic Stockpiles (the "NERVTAG Antibiotics Subcommittee"). I will discuss my involvement with the NERVTAG Antibiotics Subcommittee and the main NERVTAG committee separately.

31. I attended a total of 9 main committee meetings and 2 Antibiotics Subcommittee meetings during the Module 1 Timeframe. I exhibit the meeting minutes for those meetings at exhibits (**WSL/9.1 - INQ000145959 to WSL/9.9 - INQ000023102 and WSL/10.1 - INQ000145979 to WSL/10.2 - INQ000145980**).

32. During the Module 1 Timeframe I was also Chair of the task-and-finish group called the NERVTAG Clinical Guidance Review Subcommittee. As far as I am aware there

are no meeting minutes from this subcommittee, however, the findings from the group were discussed in main NERVTAG meetings which are exhibited to this statement. I will discuss my involvement with this subcommittee in more detail in paragraph 48.

The Main NERVTAG Committee

33. NERVTAG was established to replace the former UK Scientific Pandemic Influenza Advisory Committee (known as SPI) and extended that role to cover not only pandemic influenza, but any new, emerging respiratory virus threat to the UK.
34. NERVTAG operates under the umbrella of DHSC. It provides independent scientific risk assessments and advice over a wide range of subjects relevant to the threats posed by new and emerging respiratory viruses. NERVTAG responds to requests from DHSC, Public Health England (PHE) and the NHS.
35. An example of work undertaken by the main NERVTAG committee, is the regular review of risk assessment documents, provided by the UK Health Security Agency ("UKHSA") (exhibits **WSL/9.2 - INQ000145960 to WSL/9.8 - INQ000023057**). The risk assessments contain information on existing and emerging pathogens, including influenza and non-influenza pathogens. It is NERVTAG's responsibility to review and discuss those risk assessments and determine the pandemic potential of emerging and existing pathogens. Any agreed recommendations are reported back to the DHSC/CMO by the Chair of NERVTAG.
36. NERVTAG, by its very nature, had a significant role in contributing to the UK's planning and preparedness during the Inquiry's Module 1 Timeframe. I believe NERVTAG fulfilled its aim of providing independent scientific and clinical advice to the Government with respect to pandemic planning.

The NERVTAG Subcommittee on Antibiotics

37. The NERVTAG Antibiotics Subcommittee, comprising of 10 members, was set up very shortly after the creation of the main NERVTAG committee. I was appointed Chair of the group upon creation and still currently hold this position today, as mentioned above in paragraph 30.
38. The primary focus of the NERVTAG Antibiotics Subcommittee is to review the UK's antibiotic stockpiles and provide advice regarding antibiotic procurement in advance of an influenza pandemic.
39. The Antibiotics subcommittee regularly reviews its advice whenever there is a need to update the antibiotic stockpile. Updates to the stockpile may be required due to stock

expiring or low levels of stock, or if there is a change in epidemiology, for instance due to the widespread emergence of antimicrobial resistance amongst relevant pathogens.

40. Following any review by the Antibiotics Subcommittee, I, as Chair, write to the Chair of the main NERVTAG committee to share our sub-committee conclusions. These conclusions are known internally as Antibiotic Stockpile Review Documents.
41. If the Antibiotic Stockpile Review Documents indicate that action should be taken, for example suggesting the purchase of more antibiotics, this advice will be discussed by the main NERVTAG committee.
42. The main NERVTAG committee makes the decision regarding the final advice that should be provided to Government via the Chair of NERVTAG to the DHSC/CMO. There is no proforma way to provide this advice, however, the Chair would usually deliver NERVTAG advice to the DHSC/CMO in written form, by a letter.
43. NERVTAG's subcommittee structure is highly effective, appropriate, and successful. It would not be necessary or conducive for every member of NERVTAG to discuss in detail every topic area that NERVTAG is required to consider. Instead, the subcommittee structure allows the subcommittees the necessary time to consider specific topics, relevant to their expertise, in a space that is solely dedicated to that topic area. This ensures the correct experts are considering the relevant information and providing expert advice to the Main Committee.
44. Examples of work most relevant to the Inquiry's Module 1 Timeframe include a 2015 request from DHSC in which NERVTAG was asked to assess which antibiotics should be stockpiled in the UK in preparation for an influenza pandemic. In December 2015, NERVTAG, via the NERVTAG Antibiotics Subcommittee, put forward a list of recommendations to the CMO/DHSC (exhibit **WSL/11 - INQ000145981**). According to my understanding, the Government accepted the advice from NERVTAG. Subsequent procurement decisions are matters of policy; I do not know the details of those.
45. One of the recommendations from the NERVTAG Antibiotics Subcommittee in December 2015 was for the Department of Health to commission an update to the 2007 Provisional Clinical Management Guideline to take into account the latest available evidence. DHSC responded to this request in June 2016 (exhibit **WSL/12 - INQ000145982**).
46. In January 2018, DHSC tasked NERVTAG to review the 2007 Provisional Clinical Management Guideline, scope the updates that were required, and to report this back to DHSC so that a decision could be made on how this could be actioned.

47. On 27 February 2018, I had a call with Jonathan Van Tam (in his capacity as Deputy CMO) to discuss the operational considerations of the 2007 Provisional Clinical Management Guideline. I followed up with a letter setting out this discussion, which I exhibit at **WSL/13 - INQ000145983**.
48. In June 2018, I was appointed as Chair of the task-and-finish group responsible for reviewing the 2007 Provisional Clinical Management Guideline on behalf of NERVTAG, later called the NERVTAG Clinical Guidance Review Subcommittee (exhibit **WSL/9.6 - INQ000022974,** Action 7.1). In October 2018, the group met face-to-face and I led the review exercise (exhibit **WSL/9.7 - INQ000023035,** Section 6). The review determined that certain recommendations were out of date and that the whole guideline should be updated (exhibit **WSL/14 - INQ000145962**).
49. In April 2019, following agreement by the main NERVTAG committee, further advice was provided to DHSC regarding updating of the 2007 Provisional Clinical Management Guideline (exhibit **WSL/15 - INQ000145963**). Plans for an update of the 2007 Provisional Clinical Management Guideline were beginning to be organised around December 2019; DHSC had commissioned NHS-England to complete this piece of work and I had agreed to support NHS-England as lead on this workstream (Exhibit **WSL/9.9 - INQ000023102**, Action 9.3, Section 1.8). Those plans were paused when COVID-19 emerged and have remained paused.
50. In my opinion, the NERVTAG Antibiotics Subcommittee and the NERVTAG Clinical Guidance Review Subcommittee were successful in delivering their aim to advise the main NERVTAG committee during the Inquiry's Module 1 Timeframe.

Joint Committee on Vaccination and Immunisation (JCVI)

51. In July 2018, I applied to become a member of the Joint Committee on Vaccination and Immunisation (the "JCVI"). I interviewed as part of the application process and was successfully appointed as a member. A term of membership runs for three years and can be renewed. I am currently an active member of the JCVI.
52. The JCVI is an independent departmental expert committee. It is a statutory advisory committee established under the NHS (Standing Advisory Committees) Order 1981 (SI 1981/597). That order specified that the Committee is constituted for the purpose of advising the Secretary of State for Health (the "SofS") on "*The provision of vaccination and immunisation services being facilities for the prevention of illness*".

53. Per exhibit **WSL/16 - INQ000145984**, the JCVI's terms of reference as agreed by the UK health departments are: "*To advise UK health departments on immunisations for the prevention of infections and/or disease following due consideration of the evidence on the burden of disease, on vaccine safety and efficacy and on the impact and cost effectiveness of immunisation strategies. To consider and identify factors for the successful and effective implementation of immunisation strategies. To identify important knowledge gaps relating to immunisations or immunisation programmes where further research and/or surveillance should be considered.*"
54. The JCVI is structured such that there is a main committee and subcommittees. In general, there is a separate subcommittee for each immunisation programme. For example seasonal flu, MMR and shingles.
55. Each subcommittee is made up of a Chair, the members of the JCVI with the most relevant expertise for that subcommittee and non-voting 'specialty members' who are experts in that remit. Occasionally, external commercial companies are invited to present information to a subcommittee. The information from external companies and specialty members supplements the knowledge of the JCVI members in the subcommittee.
56. The frequency of subcommittee meetings is decided by the subcommittee Chair and dependent on individual immunisation programme timelines. This will include, but is not limited to, consideration of: (1) when a vaccine might be approved for use; (2) procurement timelines; and (3) the urgency of advice consequent on the public health situation. A subcommittee may remain in existence for as long as an immunisation programme is running.
57. The structure of the subcommittee members and meetings works well as it ensures the correct mix of expertise to engage in discussions and allows each subcommittee to be flexible to the individual needs of each immunisation programme.
58. Requests for advice from JCVI may come direct from the SofS, or via DHSC. Once a subcommittee has considered all the information available to them, the Chair of the subcommittee, would make a submission of opinion to the main JCVI committee.
59. Recommendations or advice from JCVI are decided upon by the main JCVI Committee. During the Inquiry's Module 1 Timeframe, the JCVI members would meet approximately 3 times a year, usually in London. Each meeting would be about 6 hours long and cover a range of immunisation programmes.

60. After the JCVI committee meeting I would have no further involvement in the decision process. The Chair of the JCVI (currently Professor Sir Andrew Pollard) would be responsible for submitting any decisions made by the JCVI to the SofS or DHSC. The submissions could be in the form of letters, reports or papers providing advice and recommendations. I do not know what happens to the submissions once DHSC review them.
61. The submission particularly relevant to the Inquiry's Module 1, is the JCVI's submission on stockpiling influenza pre-pandemic vaccines in 2015, however, I was not a member of JCVI at the time.
62. In 2019, I recall attending influenza subcommittee meetings to discuss influenza pre-pandemic vaccine candidates for use as part of pandemic preparedness (exhibit **WSL/17.1 - INQ000145985 to WSL/17.2 - INQ000145986**). I do not believe that I contributed to any specific papers arising out of those meetings. Any papers created as a result of these meetings would have been the responsibility of the Chair.
63. The structure provides for JCVI to report their advice directly into the SofS bypassing the need for the advice to go through others such as SAGE or the CMO, ensuring the advice remains unchanged and truly independent.
64. At the time the World Health Organisation ("WHO") published its 'Novel Coronavirus (2019-nCoV) Situation Report -1' on 21 January 2020, I believe the JCVI had adequately advised the UK Government as best it could, with the information available, to plan and prepare for a pandemic.
65. I exhibit the meeting minutes for JCVI meetings and subcommittee meetings that I attended during the Inquiry's Module 1 Timeframe at exhibit **WSL/17.1 - INQ000145985 to WSL/17.2 - INQ000145986 and WSL/18.1 - INQ000145987 to WSL/18.3 - INQ000145989**.

Section 3: Government funded research

66. The Inquiry may find my experience with the Government funded research body, The National Institute for Health and Care Research ("NIHR"), relevant for Module 1.

National Institute for Health and Care Research

67. NIHR is funded by the DHSC and its Mission is to "*provide a health research system in which the NHS supports… conducting leading-edge research focused on the needs of patients and the public*"[1].

68. Following the 2009 Pandemic, the NIHR commissioned a portfolio of pandemic research studies that were to be set up in readiness for activation during a subsequent pandemic (**WSL/19 - INQ000145990**).

69. I was Chief Investigator of a research team tasked with one of the studies in the pandemic portfolio, a clinical trial called the 'ASAP Trial', which is an abbreviation for the Blinded randomized controlled trial of low-dose Adjuvant Steroids in Adults admitted to hospital with Pandemic influenza.

70. Per exhibit (**WSL/20 - INQ000145991**), the purpose of the ASAP Trial was "*to evaluate (1) whether or not low-dose corticosteroids given as an adjunct to standard treatment is beneficial in patients who are hospitalised with severe pandemic influenza and (2) develop an 'off-the-shelf' clinical trial that is ready to be activated in a future pandemic*".

71. In 2020, at the outset of the COVID-19 Pandemic, the NIHR pandemic portfolio of studies was activated (**WSL/21 - INQ000145992**). The ASAP Trial was not activated, but was adapted into the Dexamethasone arm of the RECOVERY Trial, which was a clinical trial set up specifically in response to the COVID-19 Pandemic.

72. The Dexamethasone arm of the RECOVERY Trial was the first trial arm to recruit participants and the first trial in the world to identify a life-saving treatment for patients hospitalised with severe COVID-19 (**WSL/22 - INQ000145993**). Results from the trial were rapidly translated into clinical practice in the UK (**WSL/23 - INQ000145994**).

73. In my opinion, the NIHR pandemic research portfolio, which formed part of the Government's pandemic preparedness during the Inquiry's Module 1 Timeframe, was highly successful in delivering high-quality research results which informed decisions and practice during the COVID-19 Pandemic.

Section 4: UK's pandemic planning, preparedness and resilience

74. In general terms, it is my belief that the UK Government planned well for a pandemic and were well placed to turn those plans into action during the Inquiry's Module 1 Timeframe. In comparison to other countries, the UK's pandemic plan for influenza has been ranked as one of the best globally (**WSL/24 - INQ000145995**).

[1] About – Health Informatics Collaborative (nihr.ac.uk), per Exhibit **WSL/26 - INQ000148324**

75. At the time the COVID-19 Pandemic struck, my experience is that the UK Government was planning and preparing mainly for an influenza pandemic, as this was the most likely scenario based on prevailing evidence at the time.
76. The SARS-CoV2 virus, responsible for the COVID-19 Pandemic, was a novel virus with different characteristics compared to influenza. The UK was not as resilient against COVID-19 as desired; for example, it is widely acknowledged that the UK's stockpile of personal protective equipment (PPE) was not adequate in the initial months of the pandemic.
77. That said, as mentioned above, the UK was one of the few countries in the world to have a pandemic portfolio of research studies already set up in 'hibernation' as part of influenza pandemic preparedness and this portfolio was successfully turned towards studying COVID-19.

Section 5: Lessons Learnt

78. In light of my participation in the scientific advisory committees and groups, outlined above, I consider there to be multiple lessons which can be learned in regard to pre-pandemic planning, preparedness and resilience.

Surge Capacity

79. There was a vast information gap at the beginning of the COVID-19 Pandemic, as would be expected when faced with an entirely novel pathogen. During the first year of the COVID-19 Pandemic, the volume of scientific knowledge increased at a high pace due to the application of scientific and technological advancements towards research and communication.
80. Having such a wealth of information was highly valuable for all scientific advisory committees and groups providing a rapid response to COVID-19. This large and rapid flow of information severely stretched the resources available to appropriately assess the relevance, quality and applicability of emerging information. In preparation for a future pandemic, it would be good to see greater emphasis placed on the provision of surge capacity resources and mechanisms, to adequately manage the information being provided to advisory groups and to ensure it is effectively harnessed and integrated into decision-making.
81. Specifically, the following resources and mechanisms should be considered to improve scientific advisory committees and groups' surge capacities:

a. Additional staff within the respective secretariats. In some instances, the same staff may be providing secretariat support for more than one advisory group; for example, NERVTAG and JCVI often shared the same secretariat staff. However, at the time of a pandemic, the workload associated with each of these advisory groups can be expected to increase exponentially. For example, NERVTAG went from meeting about three times a year pre-2020 to meeting two times a week during the peak periods of the COVID-19 Pandemic. A similar escalation in meeting schedule occurred for JCVI during the COVID-19 Pandemic. To effectively prepare for the next pandemic there should be a mechanism that allows the secretariat to scale up rapidly, without compromising expertise.

b. Provision of information management specialists. The contribution of information experts towards the integration of large volumes of new information into the advisory process should be considered. We can expect both the volume and speed of flow of information to increase in a future pandemic. Managing this information, including distinguishing between relevant information and misinformation, takes effort and resources.

c. Recognised protected time from usual work to participate and contribute to scientific advisory committees and groups. Typically those participating in scientific advisory committees and groups do so whilst balancing other career responsibilities, which for some individuals were also heightened during the pandemic. While the resilience of individuals and healthcare professionals who worked beyond their call of duty was highlighted during the COVID-19 Pandemic, I believe community spirit and willingness to sacrifice should neither be overlooked nor exploited. This could be addressed, for instance, by having protected time recognised for individuals to participate and contribute to the relevant governmental advisory groups.

d. Timely activation of scientific advisory committees and groups to cover relevant scientific areas of relevance. The current process for rapidly assembling expertise at the outset of a pandemic should continue. This will help to ensure that the appropriate skills can be applied quickly to the emerging issues at hand. To support this aim, a regular review of the breadth and depth of expertise required to rapidly respond to a pandemic should be

conducted in response to the latest available scientific information regarding a future pandemic and the likely pathogen(s) involved.

e. The continuation of virtual meetings. During the Inquiry's Module 1 Timeframe, the groups and committees I was involved in would meet for face-to-face meetings, often in London. During the COVID-19 Pandemic the widespread adoption of internet-enabled platforms for meetings helped to maximise efficiencies. Leveraging technological solutions for information management and communication challenges should continue.

Science and Research

82. Research should continue to be an essential component of pandemic preparedness planning as strong, timely, and UK-based research provides the most relevant knowledge base to inform the decision-making process of scientific advisory committees. Strong research improves the ability of advisory groups to provide effective and robust advice to Government.
83. Topic areas that would particularly benefit from coordinated research efforts ahead of a future pandemic should be identified. Building relevant research infrastructure to address identified research priorities should follow. For example, while research infrastructure in primary and secondary care is relatively well developed in the UK, such infrastructure is far less developed in care homes.
84. The WHO are currently considering whether it is possible to reasonably predict potential new pathogens (Pathogen X) with the potential to cause pandemics (**WSL/25 - INQ000145996**). In my opinion, this field of research is invaluable to society on a global scale and I would welcome a major UK contribution to the effort being coordinated by WHO.

Public Communication

85. Inevitably, in the backdrop of scientific uncertainty during a pandemic due to a novel pathogen, alternative viewpoints and opinions will be expressed by other individuals and scientific bodies.
86. Scientific discourse and critique is important to making informed decisions. However, the deliberate generation of misinformation is of particular concern. Alternative sources of information, particularly of misinformation, may lead some persons to adopt

behaviours or actions which are associated with poorer health outcomes. The extent of the impact of misinformation on health outcomes and health inequalities is difficult to quantify.

87. Communication platforms and modalities will continue to evolve and expand, increasing the risk of misinformation spreading among the population. Strong and clear communication of public health advice by trusted experts is essential for a coherent public health response during a pandemic. Developing trusted sources of public health information that can effectively reach different communities is a long-term endeavour that should be strongly considered ahead of a future pandemic.

Physical infrastructure

88. Even if advice from scientific advisory committees can be rapidly updated and disseminated to healthcare providers, a health system's infrastructure may not support rapid changes in practice in accordance to updated advice. This is particularly true in relation to physical infrastructure which often cannot be easily nor rapidly modified.
89. As an example, the COVID-19 Pandemic revealed the vulnerability of the NHS and social care structures to nosocomial transmission of infection. The impact of this was most evident in care homes for older aged residents, but also likely contributed towards infections amongst staff and patients in secondary care facilities.
90. Limitations in the provision of supplemental oxygen for patients at many secondary care facilities were also related to infrastructural constraints. Concerns regarding the ability to provide oxygen supplementation to patients were most apparent during the peaks of pandemic waves when demands were at their highest.
91. The importance of modifications to the physical infrastructure of the NHS should be considered as part of future pandemic planning.

New plans for a future pandemic

92. Many advisory bodies are currently in discussion regarding preparations for the next pandemic. I would expect that the findings and recommendations arising from the COVID-19 Inquiry will valuably inform those important preparations.

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: 7 June 2023