Witness Name: Peter Openshaw

Statement No. :022

Exhibits: PO/1-PO/27

Dated: 3 August 2023

UK COVID-19 INQUIRY

MODULE 2

WITNESS STATEMENT OF PROFESSOR PETER OPENSHAW

I, **Professor Peter Openshaw,** Imperial College London, Exhibition Rd, South Kensington, London SW7 2BX, will say as follows:

Introduction

1. I am a consultant respiratory physician with expertise in viral immunology of the lung. My academic title is Professor of Experimental Medicine at Imperial College London.

2. In addition to my work on NERVTAG (see below), I was a co-lead on the CO-CIN and ISARIC4C research networks, described later in this report. Information from these studies were used to underpin some of the scientific advice provided by NERVTAG, thereby informing government policy. I have also been involved in setting up and analysing studies of human experimental challenge with influenza, respiratory syncytial virus and SARS-CoV-2.

3. Prior to the pandemic I completed a five-year term as President of the British Society for Immunology (2013-18). During the pandemic I was an elected Medical Consul within Imperial, then Senior Consul and now Proconsul (roles that have some similarities to those of a magistrate and councillor).

4. I am now Co-Chair of the Imperial Together Task Group (which was established to deliver on commitments within Imperial to improve work culture, promoting kind and ethical behaviour). I am also Theme Lead within the NIHR-funded Health Protection Research Unit

in Respiratory Infections, working between Imperial and the UK Health Security Agency. I am an NIHR Senior Investigator (now Emeritus) and was awarded CBE in 2022 for Service to Medicine and to Immunology.

NERVTAG

5. NERVTAG was established in 2014, replacing the UK Scientific Pandemic Influenza Advisory Committee (SPI, of which I was a member) and extending the role to cover not only pandemic influenza but any new or emerging respiratory virus threat to the UK.

6. I was at various times Chair, then Vice-Chair, then Co-Vice-Chair of NERVTAG until September 2022. I was asked to act as interim Chair of NERVTAG by Jonathan Van Tam when he became Deputy CMO, but the selection process resulted in Professor Peter Horby's appointment to the substantive role. I applied to join NERVTAG on 11 August 2014 and was informed on 27 October 2014 of my appointment as a member for 3 years commencing 10 October 2014 with a time commitment of up to 2 days per year; the Chair at that time was Jonathan Nguyen-Van-Tam (JVT). The first meeting was held on 19 December 2014 discussing influenza, MERS coronavirus and enterovirus D-68. I acted as interim Chair in 2017-18 when JVT became Deputy CMO and became deputy Chair when Peter Horby was appointed as Chair. I do not have the date of that appointment to hand, but my role as Deputy was mentioned in NERVTAG's 5th Annual Report January 2020-June 2021. My appointment was extended on 29 September 2020 with effect from 26 December 2020, ending on 30 December 2021. I received a further letter informing me that I was reappointed for 1 year with effect from 20 July 2021 with and end date of 19 July 2022; this membership was informally extended until September 2022. These appointments were unremunerated.

7. NERVTAG was established to review the horizon in terms of possible pandemic threats in the aftermath of the swine influenza (pH1N1) pandemic of 2009-2010. I was heavily involved in government advisory work during the influenza pandemic and brought that knowledge and experience to NERVTAG. Prior to the pandemic the committee met regularly (but not frequently) to assess the risk posed by infections of pandemic potential and to provide risk assessments, guided by civil servants. During the COVID-19 pandemic I attended 65 NERVTAG meetings.

8. Once it became clear that the novel coronavirus (nCoV) that first appeared in Wuhan at the end of 2019 (subsequently named SARS-CoV-2 by the World Health Organisation) posed a pandemic threat, the frequency and duration of meetings increased. The Chair determined the pattern of meetings, hand-picking subgroups from NERVTAG to address specific topics on which we were asked to comment.

9. The membership of NERVTAG was essentially driven by a requirement to include a range of scientific expertise (virology, infectious disease, pandemic response, public health, social science, respiratory medicine *etc.*). The membership seemed largely appropriate to the work we performed, but experts on ventilation, filtration, air handling and purification were not included in the main membership. *Ad hoc* advice was provided as needed by experts on topics that we encountered that were outside our range of knowledge. The selection of core expertise on NERVTAG seemed appropriate given the anticipated threats at the time the committee was formed. The size of the committee needed to be restricted for it to function effectively.

10. The membership of NERVTAG was restructured in April 2021. My recollection is that there was a need to bring on board new members but also to keep the size of the committee manageable. My view is that this did not change the operation of the committee substantially.

11. As the pandemic evolved, NERVTAG responded to requests for information and for summaries of current knowledge on specific topics. The decision to co-opt members *ad hoc* lay with the Chair. NERVTAG seemed adequately skilled to provide advice on most topics but the need to respond rapidly sometimes was seen as more important than the need to bring on-board the best external expertise. The decision of whom to call on seemed to be based on who was adequately skilled, available, and able to respond within tight timeframes. In the annual report of NERVTAG covering the period January 2020 to June 2021, thirty-six reports briefings and opinion papers are listed. Given the number and speed of response required of us, it would not have been possible to recruit co-opted members on each of these topics, and most of the topics covered were within the scope of expertise on the committee. The use of facemasks might be an example of an area in which additional expertise could have been called, but there was very little scientific evidence at the time decisions needed to be made. Indeed, the SAGE website reporting 16th April 2020 advice from NERVTAG on community wearing of facemasks includes the warning that "some of the information in this paper may have been superseded and the author's opinion or conclusion may since have developed".

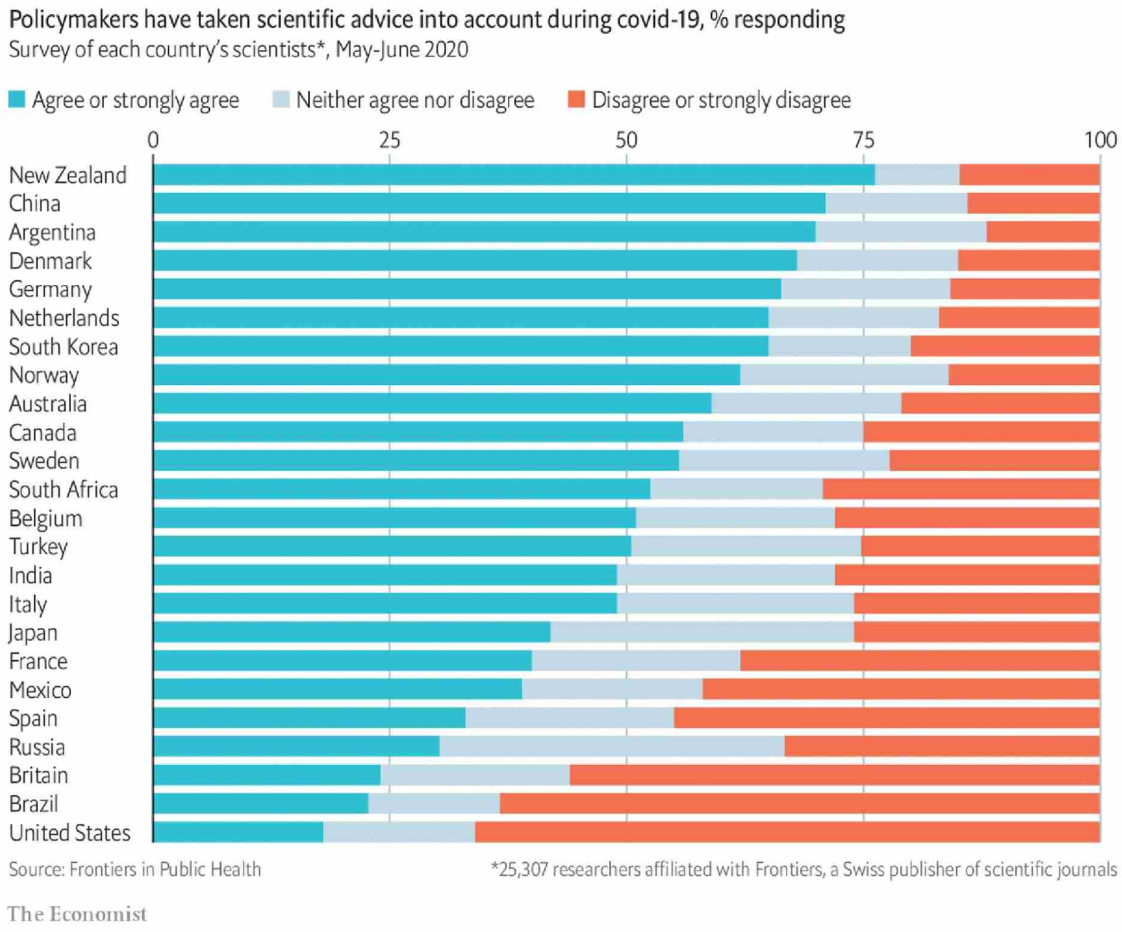
12. My personal experience was that there was little or no direct interaction with SAGE or with political decision makers. The views of NERVTAG were communicated to SAGE and to DHSC via the Chair and in the form of written reports and papers.

13. With respect to lines of accountability, I do not recollect times of confusion or error.

14. On most occasions I recall our scientific advice being acknowledged or referenced by policymakers, but apparently tempered by policy or political factors that were beyond our remit. It was well understood that the advice we provided was from the standpoint of our knowledge and judgement in relation to the scientific evidence and that we were not constituted as a decision-making body. Elected politicians would consider our advice in the context of factors

beyond our scope. My view is that this separation of roles resembles that between the civil service and the government; the government decides policy and the civil service attempts to deliver it. Mutual respect (and lack of mutual interference) is necessary for delivery of these functions. I do not think that blurring the separation of roles would be advantageous.

However, I would cite an analysis [PO/1 - INQ000203590] in *Frontiers in Public Health* cited by The Economist [PO/2 - INQ000203598] showing that a poll of scientists in May-June 2020, which rated Britain, Brazil and the USA as countries least likely to have followed scientific advice:

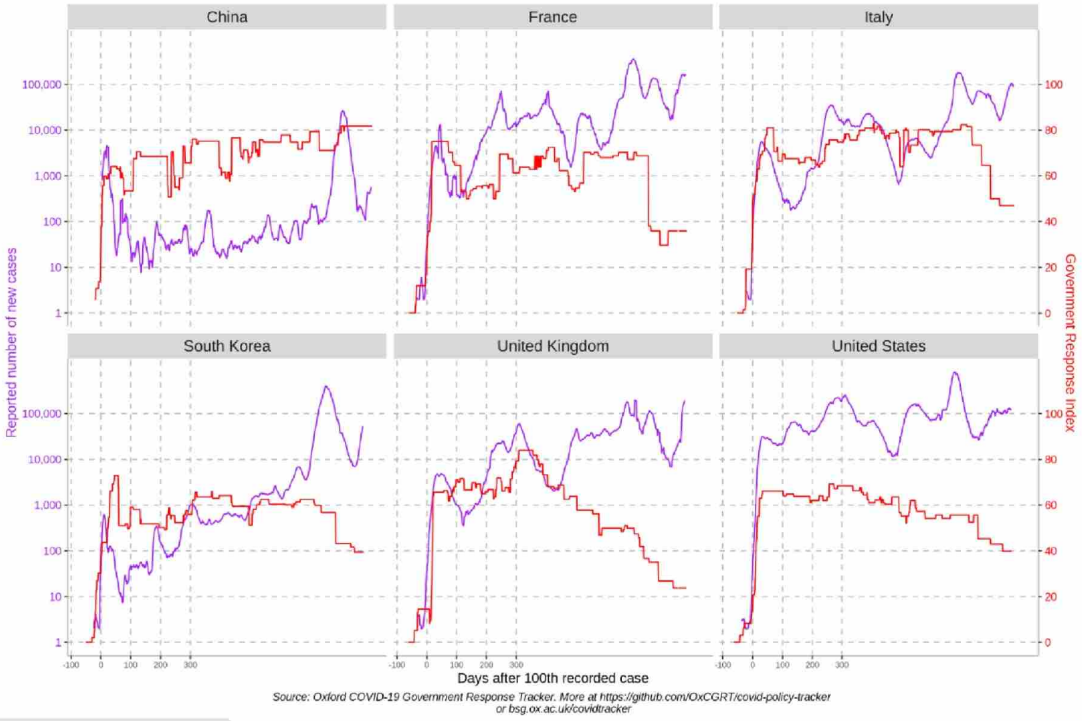


As a clinical scientist, I regret these findings because they imply that our government was considered to be following agendas that were strongly influenced by political motivations rather than scientific evidence. The views of those with expertise in political analysis would help to determine the way in which different governments in the countries listed in this analysis approached decision making and the impact that might have had on public health outcomes.

15. It was clear to members of NERVTAG that we were tasked with providing scientific, technical and clinical advice to assist policymakers in making decisions but that we were not

constituted as a decision-making body. For example, in the Fifth Annual Report (January 2020 to June 2021) [PO/3 - INQ000203606], it was stated that: *"NERVTAG does not advise directly on matters of policy, but provides scientific and clinical advice that may underpin the formulation of policy by DHSC."* I believe this was generally well understood; as Margaret Thatcher said [PO/4 - INQ000203607], "Advisers advise and Ministers decide". There is an excellent guide to the principles governing the relationship between the UK government and scientific advice here [PO/5 - INQ000101601].

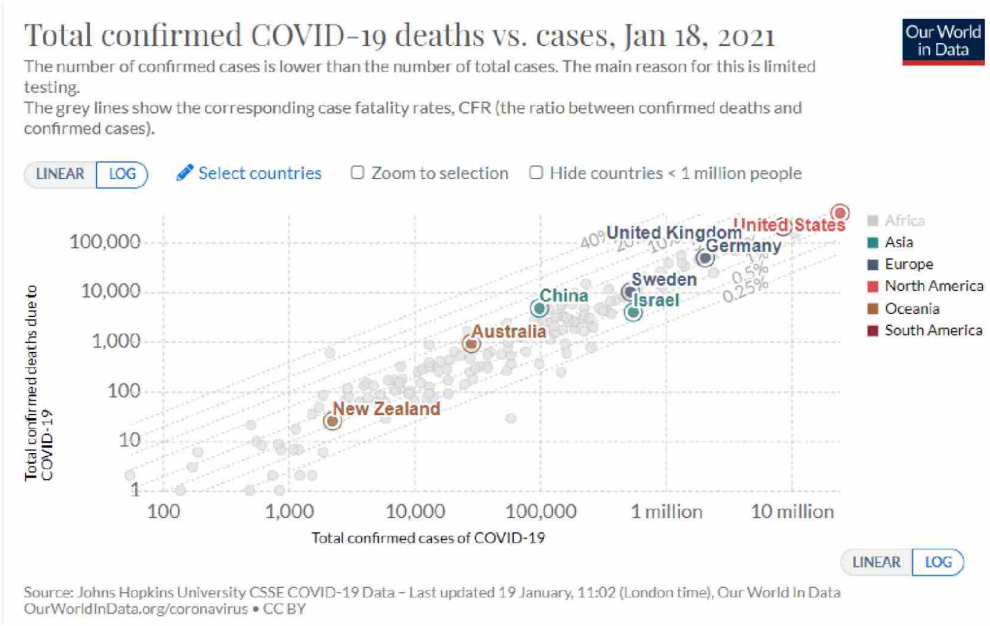
16. However, it was some evidence that the response of government to scientific advice changed over time. According to an analysis [PO/6 - INQ000203609] of the stringency of government responses, there was a progressive decline in the caution of the UK response after mid-2021, not evident in most other national trends:



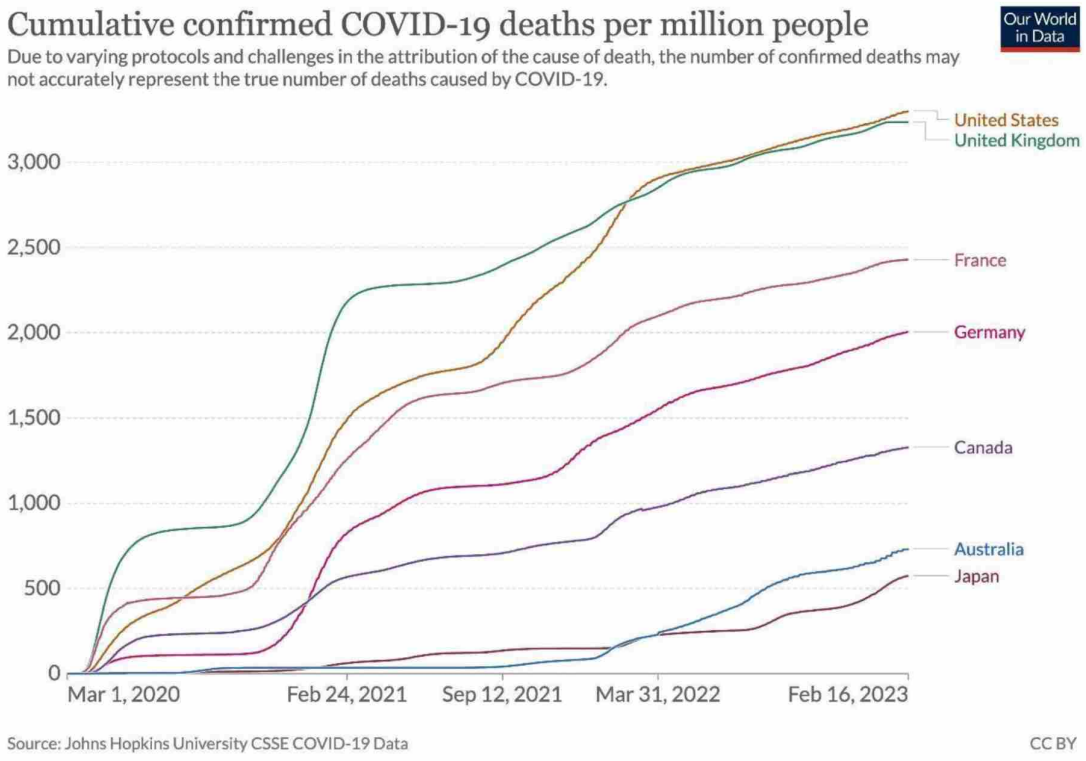
I suspect that the apparent change in political caution may be multifactorial, reflecting improved understanding of the disease, the rollout of vaccines, the improved survival of those with COVID but also the views of members of Cabinet responsible for decision-making. For example, Matt Hancock replaced Jeremy Hunt as health secretary in July 2018 but was in turn replaced by Sajid Javid in June 2021. It is likely that the response of different health secretaries to political vs. scientific factors was not the same, and that views of the broader cabinet also changed over time. The case numbers in the UK exceeded 100 in early March 2020; the point at which the UK government response index declines (shown in red on the graphic above)

occurs approximately at 486 days after the 100th case, coinciding with the change in health secretary. This does not establish that the change in leadership in health caused the decline in government response. There were undoubtedly many other factors contributing to this trend.

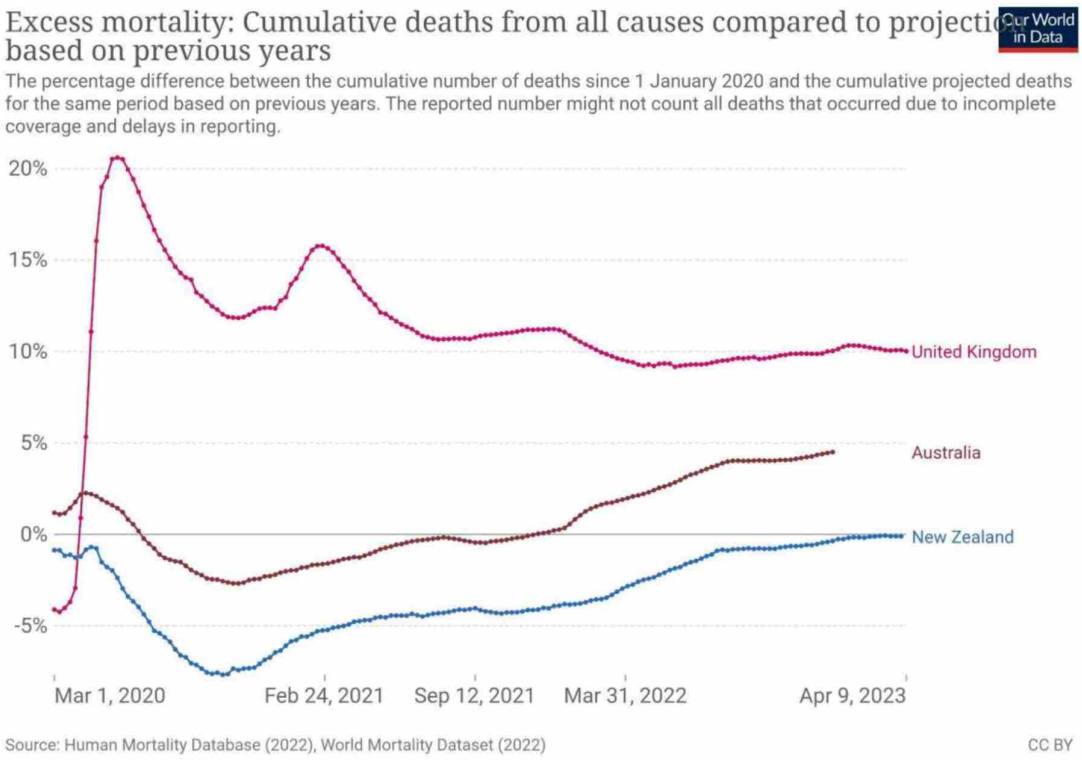
17. It is disappointing that the UK did not do better than other nations in terms of outcomes in comparison with some other countries. For example, this graphic indicates that the UK was among the worst in terms of COVID death rates:



And this more recent graphic [PO/7 - INQ000203610] shows that we seemed to do well initially, then falling behind:



And that Australia and New Zealand were able to isolate themselves until vaccination was available, with much lower excess mortality [PO/8 - INQ000203611]:



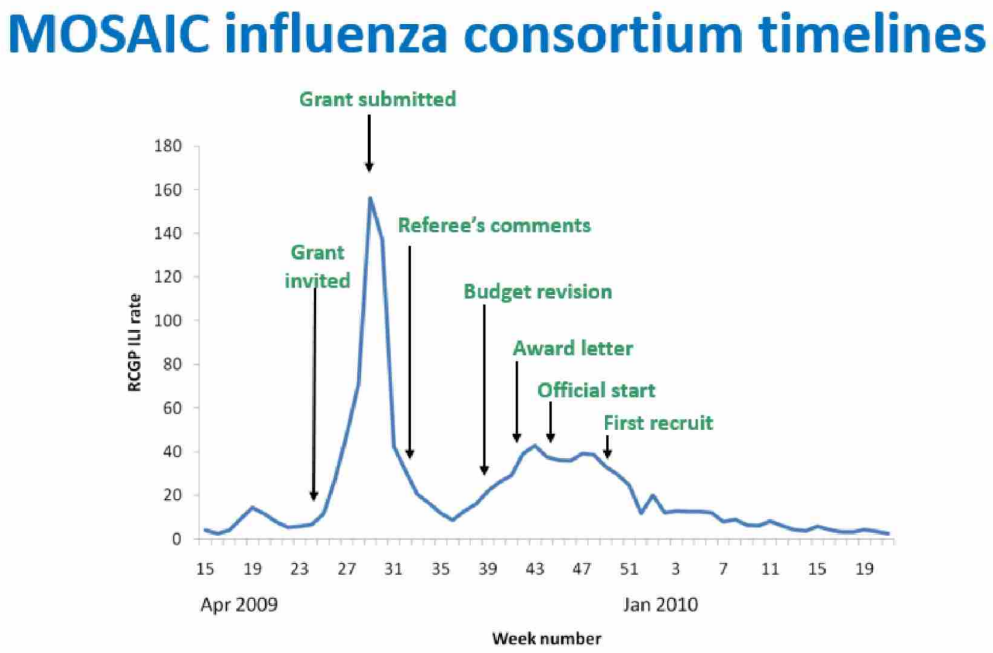
There are many possible reasons for these national differences including different risk factors in the population, preparedness, healthcare capacity and responses to pandemic advice.

CO-CIN and ISARIC4C https://isaric4c.net/outputs/ [PO/9 - INQ000232357]

18. I was a member of the COVID-19 Clinical Information Network ("CO-CIN", modelled on the influenza network Flu-CIN) and of the International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC). These linked networks were set up as an urgent response to the first reports of COVID-19, first activated on the 17th of January 2020. The ethos that underpinned the consortia was one of rapid and open sharing of data and samples with any qualified group or entity for the benefit of patients. The success of the consortium was ensured by the energetic support of the Chief Medical Officer, the Chief Scientific Advisor and other UK medical and scientific funders and leaders.

19. Another aspect that contributed to the success of ISARIC was the speed with which it was set up and rolled out. During the swine flu pandemic of 2009, the Mechanisms of Acute Severe Influenza Consortium (MOSAIC) study was subjected to accelerated but conventional funding pathways, which are not capable of providing funds to initiate studies in the timeframe of a pandemic. The ability of Imperial to set up MOSAIC depended on the good fortune to have in place Wellcome Trust funding for the establishment of the Centre for Respiratory Infection

(CRI), established in 2008 (of which I was the Director). Despite this infrastructure, the response was too slow:



20. It is essential that pandemic studies are funded immediately if they are to run effectively in the face of an emerging infectious disease. The success of MOSAIC depended on the post-pandemic wave of 2011-12, the actual pandemic was missed because of delays in funding. One of MOSAIC's main benefits was the lessons learned and protocols developed, which proved invaluable for EU-funded consortia like PREPARE and for ISARIC, which were founded on the model developed by MOSAIC.

21. These networks obtained consent to gather rich clinical data using a protocol that was developed and refined in response to the swine flu pandemic, distilling the very extensive questionnaire used in 2009 into a more streamlined document that was more practical for use in hospital.

22. The approach of ISARIC was 'tiered', allowing data collection only (Tier 1), escalating to single sets of biological samples (Tier 2) and more complex and repeated sampling (Tier 3). The approach enabled intensive study of both the virus (including viral infection loads and sequence) and the host (genetic, inflammatory and defensive characteristics and responses) simultaneously, across a range of disease severities and outcomes.

23. Over 300 hospitals across the UK contributed clinical information on COVID-19 cases in near real-time to consortium investigators. This was performed by over 2,648 frontline NHS

clinical and research staff and volunteer medical students, who collected data and provided samples from patients.

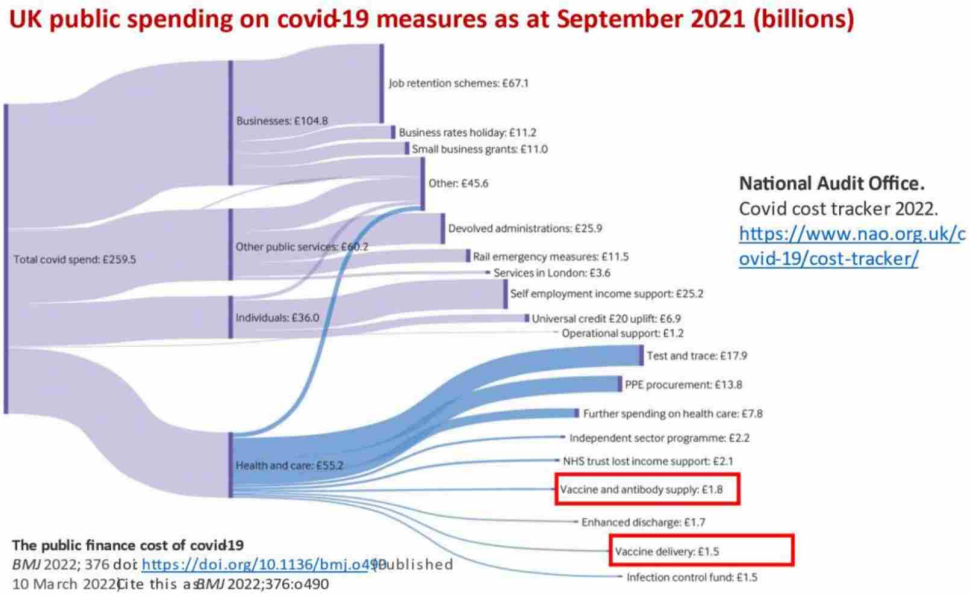
24. By July 2020, 66,592 patients had been enrolled; this number increased to 240,053 by October 2021, making the study the largest of its kind globally. The ability of the UK to perform a study of this sort must be regarded as one of our most remarkable successes. The ISARIC dataset was subsequently expanded to include more than 705,000 patients, collected in more than 60 countries and 1,500 centres worldwide (described here) [PO/10 - INQ000203591].

25. The outputs of the consortia are too numerous to list [PO/11 - INQ000232356] but include a description of the first 20,133 cases [PO/12 - INQ000203592] in the British Medical Journal, now cited by 2,896 other publications (accessed 19th April 2023). There have been many publications in the most prestigious and widely read journals, including *Nature*. For example, we showed that there were rapid responses by the clinical community [PO/13 - INQ000203593] to the discovery that steroids were effective in severe COVID, and there are complex genetic factors that determine severe disease [PO/14 - INQ000203594] (cited over 1,000 times) and that data from the consortium can be used to predict future outcome at initial presentation [PO/15 - INQ000203595] (cited 785 times). Searching the PubMed database now yields 63 publications from the consortium [PO/16 - [INQ000232353]. There continue to be important new findings from ongoing studies (examples here [PO/17 - INQ000203596] and here [PO/18 -INQ000203597]); some of the outputs [PO/19 - [INQ000232354] are summarised here: https://isaric4c.net/outputs/[PO/20 -[INQ000232355].

26. The findings from CO-CIN were used to rapidly update and inform policy and government. For example, at the Downing Street Press Conference on 22nd February 2021, data from CO-CIN were shared with the nation. CO-CIN updates were a regular agenda item at each NERVTAG and SAGE meeting. The information from CO-CIN on the demographic profile of those admitted to hospital was part of the evidence regularly presented to SAGE, some of which was incorporated into slide displays at the televised press conferences.

27. The resources and support that were made available to CO-CIN and ISARIC4C were adequate, but not substantial by international standards (the initial ISARIC award from the MRC was £4,908,946). Resources were provided incrementally according to repeated re-justification and rounds of application for funds. This was understandable given the need to make use of limited resources, but the time devoted to again making the case for funding competed with time given to analysis and reporting of outcomes. Compared to the large resources made immediately available to some research teams in the USA and the vast cost

of the pandemic to the UK in general [PO/21 - INQ000203599], the funding of these studies was not generous and certainly not adequate to the challenge that we faced.



28. The vocal and enthusiastic support for the studies from the NIHR, DH and funders was essential to the ability of the CO-CIN study to obtain, analyse and share necessary, accurate, reliable and relevant data throughout the Covid-19 response.

29. The main strengths of the study were its very large size, the ability of CO-CIN to provide representative virtually real-time data across regions, the depth of the clinical data gathered and its association (in thousands of cases within ISARIC4C) with very detailed and deep information about changes and inflammatory markers in the blood, urine, stool and mucosal fluids. The ability to operate nimbly and to rapidly provide samples and data to other research groups (and to industry) was also important. The study participants consented in almost all cases to make information and materials available to industrial partners seeking to develop new preventative or therapeutic modalities. Consent to perform linked genomic analysis of both virus and host was also a major advantage.

30. The major limitations included that its large size made it cumbersome to administer. Data recording and sample gathering had inevitable inconsistencies; some data collection was excellent but in other cases there were missing data or incomplete collection of samples. We relied on the commitment and goodwill of NHS staff who were overwhelmed with clinical work and not rewarded or compensated for their time. Some smaller studies conducted outside the consortium were quick to complete and report, while many of the in-depth analyses that the consortium enabled are still underway. The size of the study inevitably led to delays in

producing the very detailed outputs that only ISARIC4C can produce but smaller (but less statistically powerful) studies also had advantages.

The Timing of the National Lockdowns

31. The government, SAGE and NERVTAG regularly received reports on virus detection rates with excellent levels of regional and temporal granularity. It is evident that rapid lockdown measures in response to these reports would have the greatest probability of limiting spread and preventing illness, and that early deployment of lockdown measures was essential. However, the government response often seemed delayed.

32. Examples of delays include:

A. The Cheltenham Racecourse event reported [PO/22 - INQ000203600] to have been attended by more than 250,000 people over four days on March 10-13, 2020. The event ended three days before social distancing measures were announced on March 16, and 10 days before UK lockdown measures began on March 23.
B. A football match on the 11th of March 2020 between Liverpool and Atlético Madrid. This match reportedly [PO/23 - INQ000203601] was attended by 52,000 people, including 3,000 from Madrid, at a time when Spain was already had high case numbers and was in partial lockdown.
C. The delay in lockdown in relation to the appearance of the Delta (B 1.617.2), a variant that was first detected on the 5th of October 2020, and during February 2021 became widespread in India. It was reported that a UK trade delegation was planned to make new trade agreements with India, but this was cancelled on April 19th. However, travel from India was not banned until April 23rd, 2021. During the 4 days between the announcement of an impending ban and the imposition of restrictions, it was reported that 20,000 people chose to fly to the UK. Data from Public Health England (example graphic below) showed a steep rise in cases in Bolton, England from about April 22nd. The PHE report of 11th June, 2021 (Technical Briefing 15) [PO/24 - INQ000203602] shows that Delta subsequently became the dominant variant in the UK.

33. I have no direct knowledge of the reasons for the delays but one reason might have been the focus on NHS workload rather than responding to early report of cases in the community. By the stage that hospital capacity is reached, lockdown would inevitably need to be more severe and prolonged to bring infection rates down because of the inbuilt delays in disease and data reporting. This inevitably resulted in inadequate care for many admitted to NHS facilities and unmeetable demands on clinical staff.

34. Late or delayed lockdown is likely to need to be prolonged to bring down case numbers and to have greater adverse effects on health and prosperity than early lockdown.

35. The view that the public would not tolerate repeated lockdown and would suffer from 'behavioural fatigue' may have played a role, but I do not know how this opinion originated or what evidence there was for it. Members of the behavioural sciences group would be able to address this question.

36. The Institute for Government report [PO/25 - INQ000062549] 'Decision making in a crisis' seems a good source of political analysis with respect to delays and avoidance of lockdown. I do not feel qualified to comment on the quality of decision making by the UK government but I will make some general comments and recommendations in the last section of this response.

37. Throughout the pandemic there were apparent tensions between those wishing to rapidly enact restrictions and those wishing to keep businesses and schools open and the NHS running normally for as long as possible. This was made clear in public pronouncements and press conferences.

For example, on the 22nd of February 2021 Boris Johnson said in his press briefing from Downing Street: "But with every day that goes by, this programme of vaccination is creating a shield around the entire population, which means that we're now travelling on a one-way road to freedom. And we can begin safely to restart our lives and do it with confidence. And I want to be frank about exactly what that means, and the trade-offs involved. The vaccines reduce the danger of COVID; they save lives and they keep people out of hospital. But no vaccine against any disease has ever been 100% effective. So, whenever we ease the lockdown, whether it's today or in six or nine months, we've got to be realistic and accept that there will be more infections, more hospitalizations and therefore, sadly, more deaths."

He went on to say: "And then five weeks after that, no earlier than May the 17th, we'll go to step three and open all our hospitality sector to service indoors. Pubs, bars, restaurants along with hotels and cinemas, and subject to capacity limits. We will also open sports stadia, concert halls and theatres. And finally, provided we continue to pass the four tests, then from the 21st of June we will go to step four and say goodbye to most remaining restrictions, resuming large scale events like business conferences and football matches, lifting the limits on weddings and reopening nightclubs."

He goes on to explain: "I know there are some who would like to accelerate the timetable. I know, of course, there are others who would like to be more cautious and stay in the slow lane. And I understand both points of view and I sympathise because levels of infection are

still high, and we must strike a very careful balance and always accept that we've gotta be humble in the face of nature."

The pressure on one hand was to be cautious and save lives, but on the other to return to business as normal. How fast to move towards normality was a judgement call, based on perception of risks and of priorities.

38. I was a contributor to the Academy of Medical Sciences report [PO/26 - INQ000203604] published on 14 July 2020 '*Preparing for a challenging winter'*, which summarises prevailing views at that time. With respect to vaccines we concluded 'it is unlikely that a vaccine will be available this winter', but that if vaccines do become available 'Frontline health and social care workers and those at increased risk of serious disease and death from COVID-19 infection (stratified according to age and risk factors) should be considered a priority' (pp 38-39 of the report).

39. The decision to introduce the UK government's 'Eat Out To Help Out' scheme [PO/27 - INQ000203605] was not, to my knowledge, based on scientific advice. There were clearly different imperatives operating in government, but commenting on the political decision making is beyond my remit.

Transparency and Communication of Scientific Advice

40. There was a well-understood need to communicate scientific advice to the public which resulted in great demands being placed on those charged with engaging with the press. The challenge was understood by those in Government and the CMO, Deputy CMO and CSO were frequently called upon to appear alongside politicians at press briefings. However, these events were not enough to meet the needs of the press and of the public. The needs of the media were relentless; information was especially needed and valued from trusted non-governmental sources. Academics backed by the reputation of their esteemed universities were in great demand, and listened to by an attentive public.

41. Several members of SAGE and NERVTAG were asked if they would volunteer to give interviews to explain the scientific evidence as it appeared. When this arrangement was first made, the advice was that each press interview should be discussed first with the communications team at the Department of Health (DoH).

42. However, academics were also permitted to speak to the press independently on condition that it was made clear that we were speaking in a personal capacity and not on behalf so the Government or of any committee of which we were a member. I have always regarded engagement with journalists as an effective component of my mission as a university employee to inform and educate and have done so on many occasions over the past 30 years.

43. Attempts to consult with DoH were rapidly superseded because of the immediacy of communication required of us, and the relationship became one of agreeing to press interviews and these then being subjected to the retrospective watchful eye of the DoH. My impression was that those in senior positions in the DoH were generally pleased that we were doing the interviews and were grateful that the load of communication was being spread.

44. Between 1st March 2021 and 10th March 2022, I gave one hundred and six TV or radio interviews in addition to an unrecorded number of telephone interviews with journalists, especially with those wishing to check stories about to go to press. These were often given at very little notice. Of the 106 that I have noted, 59 were with the BBC (including appearances on the Today Programme, Newsnight, Broadcasting House, World at One and Question Time). I was often reliant on background briefings from the media team at the British Society for Immunology provided to me at very short notice, and especially thank Jennie Evans for her constant support.

45. It was often difficult to anticipate the questions that might be asked; this limited to usefulness of any preparation but there was in any case often too little time to prepare given the immediate needs of the broadcasters. I should highlight the vital role that the Science Media Centre plays in enhancing the quality of interactions between scientists and journalists in the UK.

Relationship between advisors and decision makers

46. My general view is that the UK's science-policy advisory mechanisms are well established and generally world-class. There may be ways that their work could be enhanced by better support and more funding, but the introduction of additional layers of monitoring or evaluation is not likely to make the existing structures work better. It is essential that work can be performed at pace, unencumbered by demands for extensive paperwork or form-filling.

47. I also believe that it is vital that policymakers and politicians do not impose their opinions and views on those charged with evaluating the scientific evidence. Evaluations should be based on the best evidence available at the time, supplied to policymakers who take this advice into account in decision-making. Advisors need to appreciate that other imperatives may operate that cause policy to deviate from what they think should happen.

48. A general trend towards false dichotomies or simplistic interpretations of scientific evidence appears evident, perhaps driven by rhetorical imperatives and by social media algorithms. There is a good discussion of this issue published in July 2021 by Escandón et al (*BMC Infectious Diseases* 21:710): "… key issues of science and public health policy have been presented as false dichotomies during the pandemic. However, they are hardly binary,

simple, or uniform, and therefore should not be framed as polar extremes. We urge a nuanced understanding of the science and caution against black-or-white messaging, all-or-nothing guidance, and one-size-fits-all approaches. There is a need for meaningful public health communication and science-informed policies that recognize shades of gray, uncertainties, local context, and social determinants of health." I recognise this trend and agree with the analysis.

Summary of recommendations for future pandemic responses

A. Long-term investment in public health and spare capacity in healthcare provision are essential to accommodate surges in demand caused by disease outbreaks.
B. It is essential to have effective systems in place to monitor the arrival and spread of infection.
C. Monitoring systems need to be highly effective and nimble, based on the established existing (publicly funded) systems, adjusted according to what is seen to work well in other countries.
D. The response to outbreaks needs to be guided by a highly effective and well-designed Test and Trace system.
E. Once cases in the community start to rise, measures to limit spread should be introduced without delay.
F. Waiting until there are large numbers of cases in hospital, or for large numbers of deaths to be reported, will necessitate more prolonged and severe lockdown measures to achieve control.
G. Funding for research during outbreaks must be provided very rapidly if it is to be effective and must be of a magnitude and duration that enables the swift creation and maintenance of research teams for the duration of the study, its completion and reporting.
H. Mounting a research response to public health emergencies depends on having well-funded teams in place prior to the emergency. It is impossible to react to a pandemic threat without long-term investment in relevant research infrastructure.
I. Effective communication to the public is essential to prevent misunderstanding and unrest. This should be from a range of trusted, well-informed, and consistent sources and include clear messaging about areas of uncertainty but provide reassurance.
J. Public figures are listened to by the public and should present a united front, not promoting false dichotomies or simplistic interpretations of scientific evidence.
K. Government advisors must remain free to speak to the press and to publish without restriction.

Statement of Truth

I affirm that the contents of this document are true and accurate to the best of my knowledge and belief.

Personal Data

Peter JM Openshaw

Dated: 3 August 2023