Witness Name: Christopher Mullin

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UK COVID-19 INQUIRY

WITNESS STATEMENT OF CHRISTOPHER MULLIN

MODULE 2 SUPPLEMENTARY CORPORATE STATEMENT CONCERNING DATA AND SCIENTIFIC EXPERTISE: 1 JANUARY 2020 – 31 JULY 2020

1. I, Christopher Mullin, Director of Analysis and Chief Economist at the Department of Health and Social Care, 39 Victoria Street, London SW1H 0EU, will say as follows:

INTRODUCTION

2. I make this statement in response to a supplementary request from the UK COVID-19 Public Inquiry (the Inquiry) asking for further information to be provided on behalf of the Department of Health and Social Care (the Department) concerning the use of data and scientific expertise in response to the COVID-19 pandemic.

3. As set out above, I am Director of Analysis at the Department, a post I have held since January 2017. Prior to this, I was Director of Policy as well as Director of Economics at National Health Service Improvement (now part of National Health Service England) between June 2014 and December 2016 and have also held other positions within the civil service. In my current role I provide professional oversight to all analysts within the Department, and report to the Chief Scientific Adviser (Professor Sir Chris Whitty until August 2021 and Professor Lucy Chappell from August 2021).

4. In order to answer the request, this statement is not limited to events between January and July 2020 as it is intended to provide the further information sought by the Inquiry.

5. As this is a corporate statement on behalf of the Department it necessarily covers matters that are not within my own personal knowledge or recollection. Where a matter is within my personal knowledge, I have sought to make this clear. This statement is, to the best of my knowledge and belief, accurate and complete at the time of signing. Notwithstanding this, it is the case that the Department continues to prepare for its involvement in the Inquiry. As part of these preparations, it is possible that additional material will be discovered. In this eventuality the additional material will of course be provided to the Inquiry and a supplementary statement will be made if need be.

SECTION 1: DATA AVAILABLE TO THE DEPARTMENT AND ADVICE PROVIDED

6. In this section I will consider the relevant sources of data on which the Department was able to draw during the early stages of the COVID-19 pandemic and the limitations which often applied to them. I will also seek to address the data and advice which the Department was able to provide more generally, and the interaction with other scientific bodies and experts, both within the Department and in wider Government.

Data known to the Department

7. Chapter 4 of the 'Technical report on the COVID-19 pandemic in the UK' (the Technical Report), an independent report published on 1 December 2022 and prepared by the UK Chief Medical Officers (CMOs) (England, Scotland, Wales and Northern Ireland), the Government Chief Scientific Adviser (GCSA), the National Health Service (NHS) National Medical Director and the relevant Deputy Chief Medical Officers (DCMOs) with input from many distinguished scientists to inform their successors (**CM/01 - INQ000087225**), outlines five categories of data that were needed and used across Government throughout the pandemic:

    a. Testing data from clinical pathways and surveillance studies: to provide estimates of incidence and prevalence of SARS CoV-2 at a national and regional level, along with details of the case composition and demographics. Once diagnostic testing was available at scale, a detailed description of case rates by demographics and at lower-level geographies helped to inform policy decision-making. Testing data and syndromic and prevalence studies were used for surveillance and to aid decisions such as those involved in progressing through the stages of the roadmap published in February 2021.

b. Healthcare data: to understand disease severity across different demographic groups and pressure on the healthcare system. COVID-19 situational reports were set up to collect key management information across the four nations. These included hospital admissions, bed occupancy and available beds by bed type (general, acute, Intensive Care Unit). These data were used to inform estimates for patient length of stay and the required bed days for patients with COVID-19, for example.

c. Vaccine data: quantitative and qualitative data streams on vaccine uptake and attitudes towards vaccines, to understand the extent of vaccine uptake across different communities and demographic groups, guide vaccination campaigns and support studies of vaccine effectiveness. Data on the number of vaccinations administered by age and location were published daily. They provided an indication of vaccine coverage by the dominant risk factor – age – which was used to prioritise vaccination rollout.

d. Deaths data: were important in situational awareness, particularly where testing was more limited, and in understanding the severity of disease in different groups. The definition of a mortality is multifaceted. As the pandemic progressed it was important to track changes in mortality rates as a result of the pandemic, not just directly from COVID-19 but also due to healthcare disruption, the impact of interventions to limit transmission and the wider societal and economic impacts. Deaths data linked with other data, such as on Clinically Extremely Vulnerable (CEV) or COVID-19 at-risk status and demographic variables, enabled understanding of which groups COVID-19 was impacting most severely as the virus evolved and new medical countermeasures became available. Deaths data were a key source in the series of publications on the direct and indirect impacts of the pandemic, which included analysis of excess deaths for different groups (**CM/02 – INQ000220212; CM/03 - INQ000074959; CM/04 - INQ000220213**).

e. Non-health data: transport operators, educational establishments, search engines and telecommunications operators provided anonymised, aggregate data. This provided insight into mobility, behaviour and social interactions, to facilitate assessment of the impact of non-pharmaceutical interventions (NPIs). Behavioural and attitudinal data – for example, from surveys and polling –

helped interpret quantitative data and understand interpretations of and adherence to NPIs. For example, the Department used mobility data to inform its understanding of the impact of national restrictions after they were introduced.

8. I would emphasise the importance of two other areas of data, not highlighted in the above list:

    a. Adult social care: key data sources included NHS Test and Trace data to assess COVID-19 prevalence and outbreaks in care homes, NHS data on hospital admissions from care settings, Care Quality Commission (CQC) and Office for National Statistics (ONS) data on deaths among care home residents, and daily reports from care providers via the Capacity Tracker (CT) on a range of topics including infection control measures, outbreaks and visiting, and later vaccinations and staffing pressures. From April 2020, the Department produced a daily Situation Report (SitRep) (**CM/05 - INQ000106353**) that brought together these sources. This was developed over the course of the pandemic to exploit new data sources and to monitor new priorities. For example, over summer 2020, as more testing capacity became available, whole care-home testing was implemented to assess the force of infection in care homes once an outbreak was identified, to guide Infection Prevention and Control (IPC) measures and to judge when an outbreak was successfully controlled such that some response measures could be stood down.

    b. Personal Protective Equipment (PPE): data included actual rates of usage in different settings, contracted volumes of PPE, current stock levels, outbound distribution, updates on product assurance, and broad sources of supplier. These data were developed during 2020: by the latter stages of 2020 the Department had available this broad set of data sources to support PPE policy decision making and operational management and planning.

9. All these categories are pertinent in the context of the Department's data access and decision-making. Particular uses included:

    a. The Operational Response Centre (ORC) produced SitReps to provide a common situational picture from 23 January 2020 until 29 June 2020 when

they became weekly. As described in paragraphs 90 to 92 of Sir Christopher Wormald's Third Witness Statement dated 29 March 2023 (referred to in this statement as the First Witness Statement for Module 2), the SitRep initially included data on the number of tests carried out in England, Scotland, Wales and Northern Ireland, the number of confirmed cases internationally and an update on the NHS and port health measures. Over the course of the pandemic, the SitRep evolved and the Department sought further data on, for example, bed occupancy, cancelled operations, availability of ventilators and workforce absence rates. Data on adult social care in England were also included with information on outbreaks, deaths, capacity, workforce, PPE and testing. The SitRep began to include broader summaries of national issues and incidents, as well as more detail on tests and the number of deaths in the UK. This evolution of the SitRep content reflected the changing landscape of the pandemic and supported decision-makers with relevant data to inform upcoming policy decisions. For example, in October 2020, decision-making was focused on the implementation of local COVID-19 restrictions (tiering and local COVID-19 alert levels).

b. The Joint Biosecurity Centre (JBC) was established in May 2020, bringing together data science, intelligence assessment, academic and public health expertise. As described in chapter 4 of the Technical Report, a cadence of bronze, silver and gold local action committee meetings was established and undertaken each week to assess latest data alongside input from local directors of public health and regional teams. The bronze meeting used early warning indicators to identify areas and key issues of concern, ensuring local insight and professional judgement from public health leads was considered alongside quantitative data (for example, on cases and admissions to hospital). Key situational awareness updates and associated policy recommendations were then escalated up through the silver meeting chaired by the CMO for England with input from public health regional directors) and the gold meeting (chaired by the Secretary of State for Health and Social Care). Through its data packs for these meetings JBC provided evidence-based, objective analysis at speed, to inform decision-making. This included: helping to inform action on testing, contact tracing and local outbreak management in England, informing an

assessment of the risks to UK public health from inbound international travel and advising on the COVID-19 alert level (**CM/06 - INQ000220221**).

c. The operational and policy use of Adult Social Care data by the Department and UK Health Security Agency (UKHSA), previously the Public Health England (PHE), was coordinated via weekly meetings of the Management of Care Home Outbreaks (MOCHO) group, which met formally from the start of wave 2 in October 2020. The meetings were led by UKHSA (then PHE) and chaired by Dr Eamonn O'Moore. These meetings involved civil servants, including senior policy officials and UKHSA epidemiologists, Scientific Advisory Group for Emergencies (SAGE) and members of the Social Care Working Group (SCWG). Senior members of MOCHO also participated in Ministerial briefings to which they brought the key points and conclusions from their previous meeting.

d. The Department regularly considered the direct and indirect health impacts of COVID-19, including jointly producing with ONS a series of publications, drawing on data on mortality, morbidity, health-seeking behaviour, healthcare activity, and on wider impacts such as the health impacts of changes in employment and loss of education (**CM/07 - INQ000220215; CM/08 - INQ000220206; CM/09 - INQ000220216**).

10. Some of the above data used by Government, particularly non-health data, were not accessible directly by the Department. Generally, data relating to other Departments' core responsibilities (transport etc.) were accessed by those Departments, with insight shared across Government for collective decision-making. Equally, it should be noted that in cases where data were held outside the Department, including health data held by arm's length bodies (ALBs), the Department generally accessed data in an aggregated and anonymised form, rather than, for example, patient- or ward- level datasets.

Limitations of data used by the Department

11. In the First Witness Statement for Module 2, Sir Christopher Wormald set out the large degree of uncertainty and lack of data about the impacts of decisions (paragraph 33). This is also described in paragraph 2 of Chapter 4 of the Technical Report:

"In the initial months data were sparse and there were considerable challenges gaining access to even the most basic data to understand the situation."

12. Limitations of data used by the Department are summarised as: lack of data; lack of data with sufficient detail or coverage; where data were untimely or updated with insufficient frequency; inconsistencies in data and limitations in access to relevant datasets.

Lack of data

13. Clearly, not all desirable data exist. Where key datasets did not exist at all, these needed to be set up, taking time and at cost.

14. One response to lack of data was the setting up of the large-scale ONS COVID-19 Infection Survey (CIS), to understand prevalence in the population (**CM/10 - INQ000220137**). The initial sample was created through an amalgamation of pre-existing surveys (around 4,000 participants per fortnightly round in April 2020) and was scaled up by autumn 2020, including the use of financial incentives (around 116,000 participants per fortnightly round by October 2020).

15. Similarly, prior to the pandemic, daily data on the use of PPE had not been collected, so it was difficult to assess levels of usage or need. The Department contracted commercial companies with deep expertise in operational logistics and warehouse management in April 2020 and from mid-May 2020 was able to access daily data on volumes distributed, to inform modelling. Data gathering for non-NHS sectors such as social care and hospices was initially drawn from small scale surveys or direct engagement with organisations. In September 2020, the Department established an online PPE ordering system for non-NHS bodies and from that point was able to access daily data on distribution.

16. Initially there were no data available nationally on ventilated bed capacity. Paragraphs 27 to 29 describe the limitations of NHS data in the early stages and how the ORC took steps to overcome these.

Lack of data with sufficient detail or coverage

17. In some cases, data did not provide the desired granularity, both geographically and for variables such as demographic characteristics. In others, data were not immediately representative of the population.

18. For example, diagnostic testing capacity and testing rates in each pillar were initially limited; once available at scale, detailed case rates by demographics and at lower-level geographies were available to inform policy decision-making such as the allocation of areas to tiers and targeting of measures at the appropriate geography (**CM/11 - INQ000106867**). Routine asymptomatic testing across institutions (such as schools, hospitals, care homes, homeless shelters and prisons) and sections of the population (such as school children and healthcare workers) gave more complete data from late 2020 onwards. For example, in November 2020, NHSEI established a national programme of twice- weekly self-testing of asymptomatic patient-facing NHS healthcare workers.

19. In Adult Social Care, the Department asked the CQC to add a data collection on deaths due to COVID-19, whether confirmed or suspected, to their regular data collection on deaths in care homes. The data were reported in the Department's COVID-19 SitRep from 26 March 2020, and following work to improve quality and completeness, were published by the CQC from 10 April 2020. Initially the data were available as weekly England-wide aggregates and it only became possible for the Department to identify regional trends in mortality after the CQC and the Department set up a data-sharing process in late April 2020. The data were collected as totals by care home and hence analysis by demographic characteristics was not possible. In May 2022, the CQC, at the behest of Ministers and after extensive consultation with the adult social care sector, published COVID-19 mortality data at the level of individual care homes for the period 10 April 2020 to 31 March 2021 (**CM/12 - INQ000220185; CM/13 - INQ000220217; CM/14 - INQ000220219; CM/15 - INQ000220218**).

20. In the First Witness Statement for Module 2, the Permanent Secretary referred to the early stages of the pandemic when data quality was challenging and returns to the Department by NHS England and Improvement (NHSEI) were difficult to use. One example of this is the data collected by the ORC for the purpose of compiling Daily SitReps. Further discussion of data limitations in this context is provided in paragraphs 27 to 29.

Where data were untimely or updated with insufficient frequency

21. Hospital admissions data available to the Department were lagged because of reporting delays and diagnosis data only being completed at the point of patient

discharge. This was partly mitigated by using data on admissions to hospital through emergency departments, a subset of individual hospital-level data available for national linkage and analysis. This still had reporting delays but avoided the length of stay delay as diagnostic information was available prior to the point of patient discharge.

22. The CQC and ONS provided the two sources of data on the number of deaths of residents in care homes due to COVID-19, and there was a trade-off between the timeliness and quality of these. The most timely source of data was CQC data on notified deaths. Care providers were required to notify CQC about deaths of their residents from COVID-19, whether confirmed or suspected, from 10 April 2020. The Department relied primarily on the CQC deaths data to monitor deaths in care homes during the course of the pandemic, rather than the more lagged deaths registrations data, which were used as the basis of ONS deaths statistics.

Inconsistencies in data

23. International comparisons of deaths were difficult due to differences in surveillance (including differences in testing capacity, access and uptake), timeliness of data, quality of data and definitions. A World Health Organisation (WHO) review found that national recording of COVID-19 deaths in 2020 varied predominantly between those countries that required laboratory confirmed tests to record COVID-19 as a cause of death and those that recorded deaths based on a clinical diagnosis of COVID-19. For example, Belgium included suspected cases as well as confirmed cases in their deaths total in 2020, which was hypothesised to be a potential contributing factor to their reported death rate being amongst the highest at the start of the pandemic (**CM/16 - INQ000220226**).

24. In parallel, there were data challenges associated with evolving case definitions. Where the clinical definition of COVID-19 changed, it meant that additional data were often needed and it created issues with accuracy. There were also some initial inconsistencies between hospitals' reporting of COVID-19 admissions and bed occupancy.

25. One limitation of the CQC data on notified deaths in care homes was that judgements about the involvement of COVID-19 were made by the care home provider, not following a clinical diagnosis or test result, and were not necessarily reflected in the

death certification. However, the CQC data about the involvement of COVID-19 were significantly more timely than the ONS data. A comparison of CQC and ONS data on COVID-19 deaths was published by the ONS on 21 July 2020. (**CM/17 - INQ000220146; CM/18 - INQ000220224; CM/19 - INQ000220225; CM/19A – INQ000220227**).

Access to relevant datasets

26. Data acquisition at speed, including from ALBs, was initially challenging, due in some cases to time navigating what relevant data existed where, across multiple organisations; the need to establish new data sharing flows between organisations; data governance processes; an absence of common platforms and constrained data skills to provide and absorb additional data swiftly. The JBC was established in May 2020. This included setting up a dedicated team for data acquisition (in place by the end of May 2020) to map what data sat where, form relationships with organisations to agree access and unblock barriers to access as they arose. Over time, the understanding of data available, relationships across organisations and relevant formal agreements improved. Progress on accessing data was made prior to the JBC being established: for example, on 17 March 2020, a Control of Patient Information (COPI) notice was served to NHS Digital requesting that it securely share patient confidential data (with appropriate safeguards in place) to support situational analysis and assessment for pandemic response (**CM/20 - INQ000049660**). This enabled decisions about which patients were defined as Clinically Extremely Vulnerable and should therefore be included in the Shielded Patient List (SPL), used to target shielding interventions.

27. Data limitations due to challenges with data supply, speed of distribution and accuracy of data sets were most evident from February 2020 until April 2020. During this period, the ORC requested data from NHSEI on regional and national delivery indicators. This was to inform ORC's daily SitRep to Ministers and Senior Officials. Data requested included hospital capacity and occupancy, numbers and availability of Intensive Care Unit and critical care beds, ventilators, workforce absences and A&E attendance levels. Data limitations meant that incident response decisions were taken at times with limited supportive evidence. Paragraphs 85 and 86 of First Witness Statement for Module 2 set out data limitations of low- or non-availability of testing data.

28. Some of the most significant inter-organisation data challenges were overcome by mid-April 2020. This followed senior Departmental intervention, including from the Deputy CMO, and intervention from SAGE. Following on from the 16 March 2020 SAGE meeting, Professor Sir Jonathan Van-Tam (Deputy CMO) chaired an urgent workshop on data flows and an agreement was reached with PHE and NHSEI that stronger data discipline and quicker flows of information were necessary to inform timely reporting to Ministers (**CM/21 - INQ000109155**).

29. By early April 2020 more NHS data had also started to flow in to the SitRep and Local Resilience Fora data packs. Chapter 4 of the Technical Report describes how these analyses were assessed to inform policy, including the cadence of bronze, silver and gold local action committee meetings (**CM/01 - INQ000087225**).

30. To manage, interpret and communicate the data flows that were being established, new data-related functions were rapidly set up across the Department, initially drawing on existing staff. For example, I re-deployed analysts at the centre of the Department to provide briefings to ministers on COVID-19 and to support national media briefings and policy development. Similarly, a large proportion of routine analytical work on social care was paused to enable social care analysts to focus on COVID-19- related issues. Small analytical teams were put in place to support work on testing and PPE. I also worked with the Government Analysis Function to obtain some surge analytical staffing from across the civil service. Initially these functions were heavily resource-constrained; this eased over time as new analytical units became established and recruitment was undertaken.

31. From the outset multiple sources were required to understand the progression of the pandemic and its impacts on the population. Triangulation of multiple datasets was key; for example, epidemiological analysis continually triangulated the more representative (but lagged) surveillance studies with the more timely (but often biased) testing case data. Diagnostic testing data were always going to be biased to some degree by testing capacity and access, and variation in uptake across socio-economic groups, even when diagnostic testing was available at scale.

32. Despite the data barriers, emphasis was placed on improving data in relation to the most vulnerable groups: this included studies on inequalities, improvement of social care data and linked datasets in relation to COVID-19 deaths, at-risk status, variants,

vaccination status and demographic variables. This is described in paragraphs 295 and 296 of the First Witness Statement for Module 2 , as follows:

> *"295. Consideration of vulnerable groups was at the forefront of the Department's work in responding to the virus from the very beginning and continued throughout, for example, the shielding programme. The Department's understanding of who constituted vulnerable groups developed over time as understanding of the pandemic advanced. Vulnerabilities could be described ranging from variables of clinical conditions (see section on shielding at paragraphs 196-198) and demographic detail (eg age, ethnicity) to social, financial and geographical variation. It was important to recognise the intersectionality of these vulnerabilities and policies and interventions became increasingly more discerning as higher granularity of data became more available. Further detail on this can be found in Chapter 2 of the Technical Report (***CM/01 - INQ000087225***).*
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> *296. Our initial understanding of clinical vulnerability i.e. a potentially higher risk of becoming infected or of having a more serious outcome from infection, changed through the pandemic as evidenced epidemiological estimates of infection, hospitalisation and case fatality rates for different conditions became more robust using both UK and international data. The UK was the first to develop a digital risk tool to support individual clinical decision making (QCovid) based on work commissioned on CMO's request by NERVTAG and delivered by Oxford University working with oversight and four nations support from the DCMO (CW3/520 - INQ000106868). Other vulnerabilities were addressed by a number of different individual and joint research programmes, papers and analyses including for example (CW3/521 - INQ000107085 and CW3/522 - INQ000106159) reports on ethnicity, age [particularly children], healthcare workers [SIREN], care home residents and staff [Vivaldi], specific vulnerable cohorts, disabilities and special educational needs, socioeconomic and occupational parameters – the evidence from which was considered during policy development. As with understanding of clinical conditions evidence accumulated through the pandemic with more detail accruing on wider topics over time e.g. multi-generational housing, or occupation, in the community infection survey. A second version of the QCovid risk tool was designed specifically to try to address the intersectionality of socioeconomic deprivation with existing demographic variables and underlying clinical conditions."*

33. In addition to quantitative and qualitative data sources covered above, the Department used a range of wider evidence. This included analysis, research and advice from academics and clinicians and emerging literature on the impacts of interventions. See section 2 for further detail on the assessment of impacts. As discussed elsewhere in sections 2 and 3, the Department had access to expert epidemiological modelling from SPI-M-O and SAGE, alongside engagement with HMT on what macroeconomic analysis and advice they were able to provide, as part of cross government processes. The Department saw macroeconomic analyses and scenarios from the Bank of England (BoE), the Office for Budget Responsibility (OBR) and others, which are reflected in the public domain. Where possible, the Department did consider both epidemiological modelling and economic analysis (see paragraphs 59-61), but it did not have access to models that integrated epidemiological and macro-economic systems simultaneously. Such modelling did not exist within Government, and could not have been developed to high quality within the timescales. Even from a conceptual point of view, my view is that, given the limitations of macroeconomic modelling, and the many parametric uncertainties, a combined macroeconomy/epidemiological model would not have provided a reliable basis for decision making.

34. More generally, it was not the Department's role to lead on macroeconomic analysis during the pandemic. Instead, HMT were invited and able to provide input into the Department's work, both directly and through Cabinet Office-coordinated processes: for example, HMT officials and ministers reviewed the Department's publications on the direct and indirect health impacts of COVID-19 and provided text related to macroeconomic effects for the analytical paper on the health, economic and social effects of COVID-19 and the approach to tiering (**CM/111 - INQ000136696**).

35. The Department also carried out a retrospective Value for Money Assessment of the COVID-19 vaccine deployment (Phases I and II: the offer of two doses to all adults); this considered both epidemiological and macro-economic impacts where possible, as well as indirect health impacts. HMT reviewed and provided comments on the interim report, which was provided to them in late 2021; they approved a final copy of the report in September 2022 (**CM/21A – INQ000067876**)

SECTION 2: SCIENTIFIC ADVICE

36. As explained in the Department's First Witness Statement for Module 2, the Department had access to a range of medical and scientific expertise, data and modelling. This included ongoing collaboration between officials, Ministers and clinical, scientific and data experts across the Department's policy areas, as well as the advice that the Department received from expert advisory groups such as SAGE.

37. SAGE was activated in January 2020 to advise on the UK Government's response to the pandemic. This activation of SAGE was co-chaired by the GCSA and the CMO, with the secretariat provided by a team of civil servants in the Government Office for Science (GO-Science).

38. As was the case across Government, the Department was not only able to access scientific advice provided by SAGE, but also able to propose questions of interest for consideration by SAGE and its subgroups. Examples of issues which were considered on behalf of the Department included care home outbreak testing and regular testing. SAGE was asked in June 2020 for guidance on retesting, outbreak testing and expansion of testing to other adult social care settings. Based on SAGE and PHE advice and on the Vivaldi research study into COVID-19 in care homes, the Department developed the next stages in the testing strategy for adult social care (**CM/22 - INQ000106159; CM/23 - INQ000220176; CM/24 - INQ000220171; CM/25 - INQ000220174; CM/26 - INQ000220170; CM/27 - INQ000220175; CM/28 - INQ000220173; CM/29 - INQ000220200; CM/30 - INQ000220199; CM/31 - INQ000220203; CM/32 - INQ000220202**). SAGE was also considering adult social care settings prior to May 2020. An example comes from the 14th SAGE meeting held on 10 March 2020 stated that '*SAGE advised that special policy consideration be given to care homes and various types of retirement communities (where residents are more independent)*' (**CM/32A - INQ000109125**

39. I understand that the corporate statement being prepared on behalf of GO-Science will address the detail of advice provided by SAGE.

40. It should be noted that many of the relevant expert advisory groups fed directly into the work of SAGE for the duration of the COVID-19 response. This included advisory groups which advise the Department such as the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG), as well as those supported by the Department

secretariats, such as the Scientific Pandemic Influenza Group on Modelling - Operational sub-group (SPI-M-O).

New and Emerging Respiratory Virus Threats Advisory Group

41. The role of NERVTAG is to advise the CMO and wider health system by providing scientific risk assessments and mitigation advice on the threat posed by new and emerging respiratory virus threats and options for their management. The scope of the group includes new and emerging respiratory virus threats to human health including strains of influenza virus (regardless of origin), and other respiratory viruses with potential to cause epidemic or pandemic illness, or severe illness in a smaller number of cases. NERVTAG is supported by a scientific secretariat from UKHSA and is scientifically independent.

42. All minutes of NERVTAG meetings from its first meeting regarding COVID-19 on 13 January 2020 are published online (**CM/33 - INQ000023107; CM/34 - INQ000023119; CM/35 - INQ000047820; CM/36 - INQ000047819; CM/37 - INQ000119615; CM/38 - INQ000119616; CM/39 - INQ000119469; CM/40 - INQ000087540; CM/41 - INQ000212195; CM/42 - INQ000119619; CM/43 - INQ000220132; CM/44 - INQ000220209; CM/45 - INQ000220210; CM/46 - INQ000120154; CM/47 - INQ000120161; CM/48 - INQ000220211; CM/49 - INQ000109339; CM/50 - INQ000070297; CM/51 - INQ000070298; CM/52 - INQ000070299; CM/53 - INQ000120426; CM/54 - INQ000120427; CM/55 - INQ000220140; CM/56 - INQ000220141; CM/57 - INQ000120428; CM/58 - INQ000120429; CM/59 - INQ000120430; CM/60 - INQ000120431; CM/61 - INQ000120432; CM/62 - INQ000120433; CM/63 - INQ000120434; CM/64 - INQ000120446; CM/65 - INQ000120445; CM/66 - INQ000220153; CM/67 - INQ000220154; CM/68 - INQ000120385; CM/69 - INQ000120386; CM/70 - INQ000120447; CM/71 - INQ000120387; CM/72 - INQ000120390; CM/73 - INQ000220161; CM/74 - INQ000120435; CM/76 - INQ000120436; CM/77 - INQ000120448; CM/78 - INQ000120437; CM/79 - INQ000120449; CM/80 - INQ000120450; CM/81 - INQ000120438; CM/82 - INQ000120439; CM/83 - INQ000120440; CM/84 - INQ000120441; CM/85 - INQ000120442; CM/86 - INQ000120443; CM/87 - INQ000220180; CM/88 - INQ000220181; CM/89 - INQ000120444; CM/90 - INQ000120357; CM/91 - INQ000120361; CM/92 - INQ000120451; CM/93 - INQ000120376; CM/94 - INQ000119777; CM/95 - INQ000119778; CM/96 -**

INQ000119779; CM/97 - INQ000119415; CM/98 - INQ000119780).

Scientific Pandemic Influenza Group on Modelling - Operational

43. In non-emergency periods, the Scientific Pandemic Infections Group on Modelling (SPI-M) provides expert advice to the Department and wider UK Government on scientific matters relating to the UK's response to a pandemic. The group may also provide advice on other emerging human infectious disease threats as required. The Department has sponsorship of SPI-M and determines its programme of work.

44. Between January 2020 and March 2022, SPI-M-O was activated as an operational subgroup of SAGE specifically to support the Government's response to COVID-19. The group provides expert advice based on infectious disease analysis, modelling and epidemiology. SPI-M-O is a separate advisory group to SPI-M, though participants may be partly or mostly drawn from the latter. The secretariat for both groups is provided by civil servants in the Department.

45. The first meeting of the group took place on 27 January 2020, with SAGE formally agreeing that it was a formal sub-group of SAGE for the duration of the outbreak on 28 January 2020 (**CM/99 - INQ000106070**). During this period, SPI-M-O reported through these SAGE structures exclusively. All SPI-M-O advice was cleared through SAGE, or by both the GCSA and the CMO in the absence of a SAGE meeting.

Social Care Working Group

46. The SAGE Care Homes Working Group was formally established in May 2020. The group was set up to advise on the optimum testing strategy for assessing the incidence of COVID-19 in care homes and on data sources to maximise the effectiveness of infection prevention and management in care home settings. This group was replaced by the SAGE Social Care Working Group (SCWG) in October 2020, widening its focus from care homes to encompass all care sectors, including residential care settings, domiciliary care provision and specialist e.g. learning disabled settings, although noting at the outset that accessible robust data sources were very limited. The Department provided the secretariat for the SCWG.

47. In addition to advice from its subgroups and other expert advisory groups, SAGE considered advice and evidence tabled by Government organisations where relevant.

This included occasional advice from the Department, which was then cleared by SAGE and released by GO-Science. For example, the Department produced a series of analyses on the direct and indirect impacts of COVID-19 in collaboration with ONS and other organisations, which were considered by SAGE (**CM/02 – INQ000220212 - CM/08 - INQ000220206; CM/100 - INQ000220222**).

48. The Department also accessed expert advice from groups outside SAGE and its subgroups. In particular, this included advice from NERVTAG, and from the Joint Committee on Vaccination and Immunisation (JCVI). This advice is discussed in the Department's First Witness Statement for Module 2.

SECTION 3: QUANTIFYING THE IMPACT OF DECISIONS AND INTERVENTIONS

49. In this section I will consider the role played by the Department in assessing the wider economic and social impacts of the decisions and interventions which were made during the pandemic.

50. As set out in the Department's First Witness Statement for Module 2, throughout the pandemic the Department remained the principal department on health and social care issues arising from the pandemic, whilst the wider response to the pandemic became a whole of Government issue, with key decisions and overall policy responsibility being taken over by the Cabinet Office (CO) and No.10 Downing Street (No.10).

51. Formal cross-Government analytical co-ordination was provided by the CO (including the International Comparators Joint Unit) and subsequently the COVID-19 taskforce's analytical function convening meetings and analytical work. In practice, this meant that the Department provided advice on the health impacts, drawing on the technical advice of SAGE or the CMO. Assessment of wider economic and societal impacts was primarily led by other Government Departments and relevant advisory committees.

52. In addition to the direct and indirect health impacts, the Department routinely considers economic and wider societal impacts in its decision-making throughout the policy development process and through assessment of likely impacts via regulatory impact assessments.

53. Decisions taken by the Department in relation to the pandemic that considered health and wider impacts can be categorised as:

a. Introduction of COVID-19 regulations, for domestic and travel interventions.
b. Procurement, for example in purchasing PPE and antivirals.
c. Provision of guidance and support, for example for providers of adult social care.
d. Funding decisions, for example in community pharmacy for the introduction of a new medicines delivery service.
e. Operational decisions, for example to determine numbers of rooms required for the Managed Quarantine Service.
f. Whether to accept JCVI advice on COVID-19 vaccines.
g. Lifting or easing regulatory restrictions, for example the decision to delay the requirement for updating Pharmaceutical Needs Assessments for twelve months.

54. The process for the assessment of impacts for these decisions varied according to the types of decisions and the speed with which they needed to be made.

Impact Assessments and impact statements

55. In response to the pandemic, many (often temporary) measures were introduced at pace. Under statutory exclusions that were in force, Departments were not required to complete full regulatory impact assessments (IAs) for these measures and instead developed impact statements that quickly mobilised known evidence, which, as discussed above, was subject to limitations **(CM/101 - INQ000220220)**.

56. Impact statements were tools for summarising known evidence and uncertainties for Ministers, as an input to the package supporting the decisions around regulations, rather than as the basis for making decisions about whether to introduce measures. COVID-Operations (COVID-O), a cross- government collective decision-making body produced key documents for this decision making and, among other sources, the Department drew on the materials in these papers for its impact statements (**CM/101 - INQ000220220**).

57. The Department also received inputs to impact statements from Departments in line with their respective policy responsibilities, including CO, His Majesty's Treasury (HMT), Department for Business Energy and Industrial Strategy (BEIS), Department for Transport (DfT) and Department for Digital, Culture, Media and Sport (DCMS). Given the speed of decision-making during the pandemic, the novel nature of policy

and the high levels of uncertainty, impact statements had to be developed rapidly and absent of a robust body of evidence. In general, I consider it better to provide indicative, caveated analysis, an overview of known evidence and an articulation of uncertainties, than to withhold all impact analysis from decision-making.

58. In some cases, in considering indirect impacts of unprecedented policy interventions on health, education and the economy, impact statements articulated the likely direction of impact, in so far as this was clear, and any evidence that might give an indication of the level of impact, rather than seeking a full, quantified cost-benefit analysis. Not only was the impact of new policy difficult to quantify but the counterfactual against which measures would be compared was always challenging as this would depend on how infections were expected to change without intervention and how people would change their behaviour in response to these changing infection rates and other factors, such as those set out below.

59. An example is the impact statement for the second national lockdown (**CM/102 - INQ000110010**), which considered evidence in relation to the following impacts:
    a. COVID-19 cases, outcomes and related healthcare costs.
    b. Non-COVID-19 physical health impacts including impacts on health services, and behaviours such as alcohol consumption and exercise.
    c. Mental health impacts such as levels of anxiety and depression.
    d. Impacts on hospitality, accommodation and leisure, arts, entertainment and recreation and non-essential retail, such as the demand for specific occupations.
    e. Wider economic impacts such as the direct effects of sector closures and the longer-term implications for the economy.
    f. Wider social impacts such as on education.
    g. Environmental impacts such as levels of pollution.

Other analyses

60. In some cases the Department carried out additional standalone analyses of impacts. For example, in response to a CMO request on the impact on school absence of COVID-19 vaccination of healthy children aged twelve to fifteen (**CM/103 - INQ000220194**).

Evidence papers on the direct and indirect health impacts of COVID-19

61. SAGE asked the Department and the ONS to consider the direct and indirect health impacts of COVID-19. This resulted in five papers that were submitted to SAGE and subsequently published (**CM/07 - INQ000220215, CM/100- INQ000220222; CM/104 - INQ000220186; CM/105 - INQ000220187; CM/106 - INQ000120639; CM/107 - INQ000220192; CM/108 - INQ000220188; CM/109 - INQ000220190; CM/110 - INQ000075019**). The papers were frequently used in response to Freedom of Information requests (FOIs) and Parliamentary Questions (PQs) concerning how the Government was taking into account health impacts, particularly from lockdowns. The papers present total impacts of the pandemic as it is impossible to distinguish between the impacts of infections, interventions and voluntary behaviour changes.

62. The Department published an analytical paper on the health, economic and social effects of COVID-19 and the approach to tiering (**CM/111 - INQ000136696**). It was an HMG-badged document, following steers from CO and No.10; it had input from HMT, Department for Education (DfE), BEIS, DCMS, CO and No.10. The Department led on publication and press operation.

63. Internal analyses were circulated regularly, sharing evidence on the impacts of the pandemic. These brought together data and analysis from multiple sources and included consideration of the direct and indirect impacts of the pandemic, and of the behaviours of individuals and compliance with regulations.

Commissioned research and analysis

64. The Department's Science, Research and Evidence (SRE) function and the National Institute for Health and Care Research (NIHR) played a very important role in the Government response to the pandemic by commissioning and prioritising COVID-19 research, initiating trial platforms and supporting rapid recruitment to a wide range of studies. Chapter 3 of the Technical Report describes the mechanisms used to prioritise and conduct research (**CM/01 - INQ000087225**).

65. The NIHR response led by SRE was multifaceted. First, it involved rapid pivot of work by research groups to SARS-CoV-2 research across the research spectrum. Second, NIHR/SRE worked with other funders, particularly UK Research and

Innovation/Medical Research Council (UKRI/MRC), to co-fund the large system-wide research required.

66. Third, the rapid and successful research response would not have been possible without the extensive support and infrastructure provided by the NIHR. For example, without the Clinical Research Network (CRN) and the Urgent Public Health (UPH) system it would not have been possible to recruit so many patients and to prioritise studies and ensure only the most important were conducted during a time of emergency. The collective response of the entire system - funders, researchers, and the public was extraordinary. It enabled a large volume of high-quality research to get underway rapidly.

67. Research calls included:

    a. Joint NIHR-UKRI COVID-19 Calls: The Rapid call (two calls within a call) was launched in February 2020 and projects commissioned in March 2020. The funded projects were expected to lead to a benefit in UK and international public health within 18 months. A total of 26 projects were funded at a cost of approximately £26 million, including the RECOVERY trial and the Oxford vaccine early study. The Rolling call ran from April 2021- June 2021, though some additional commissioning took place in the subsequent 3 months. The Rolling call for research, which built on the initial call, had no fixed dates for submission of applications following the launch of the call, and sought to provide a further opportunity for researchers to apply for funding to support rapid research to address a wide range of COVID-19 issues. The intention was to provide a robust but rapid process for research of all types, which permitted applications to be reviewed and funded quickly, with the intention of enabling researchers to respond quickly to the pandemic as it developed. The panel, chaired by Professor David Heymann, met weekly to consider applications. Four highlight notices on ethnicity, mental health, seroprevalence and transmission were issued during this time to seek proposals on these specific topics, aimed at research for public health benefit within 12 months.

    b. Fighting Fund: In the March 2020 Budget, HMT provided the NIHR with £30 million of new funding to enable further rapid research into COVID-19. This was colloquially known as the 'fighting fund'. This could be spent with joint agreement from both the CMO and the GCSA. The idea was that given the health emergency

there would be some discrete pieces of research or related work that needed to be done so rapidly that it was not possible to fund them through the normal mechanisms, so this alternative funding was used. For example, with COVID-19 Genomics UK Consortium (COG-UK); their mission was to rapidly provide the knowledge, expertise, and facilities for UK-wide SARS-CoV-2 genome sequencing and analysis. COG-UK supported 16 sequencing hubs and regularly reported to SAGE. COG-UK generated the data that enabled identification of the Alpha variant (December 2020) and tracking of variants of concern in general.

c. NIHR Health Protection Research Units (HPRUs): NIHR funds the NIHR HPRUs as partnerships between universities and UKHSA. HPRUs rapidly switched to working on pandemic studies, including revamping their new work programmes from April 2020 (**CM/112 - INQ000220196**). They produced rapid studies and took on responsive research on priorities identified by the Department. These included the Assessment of Transmission and Contagiousness of COVID-19 in Contacts (ATACCC) study on household transmission, led by the Respiratory HPRU (Director Ajit Lalvani at Imperial College London) (**CM/113 - INQ000220223**).

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: 25/08/2023