Witness Name: Jenny Harries
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UK COVID-19 PUBLIC INQUIRY

MODULE 3

WITNESS STATEMENT OF PROFESSOR DAME JENNY HARRIES

Section 1: Introduction

I, Professor Dame Jenny Harries, of the UK Health Security Agency, 10 South Colonnade, Canary Wharf, London E14 4PU, will say as follows:

1.1. I am the Chief Executive Officer ("CEO") of the UK Health Security Agency ("UKHSA"). Prior to taking on that role, I was Deputy Chief Medical Officer ("DCMO") for England from 15 July 2019 to 31 March 2021.

1.2. I make this statement in response to a Rule 9 request from the UK Covid-19 Inquiry ("the Inquiry") dated 18 March 2024. This is the 6th witness statement I have submitted to the Inquiry.

1.3. Before my appointment as DCMO, I was Regional Director for the South of England within Public Health England ("PHE") from 2013 to 2019. Alongside this, I was interim Deputy National Medical Director for PHE from 2016 to 2017 providing specific support for strategic incident response. From April 2017 until I commenced the DCMO role, I also formally held the strategic incident Deputy Medical Director role at PHE. I have been a member of several national advisory groups including the Joint Committee on Vaccination and Immunisation ("JCVI"), the National Advisory Committee on the NHS Constitution, the NHSE Clinical Priorities Advisory Group and the Women's Health Taskforce.

1.4. Prior to joining PHE, I worked as a Director of Public Health in Norfolk & Waveney, Swindon and Monmouthshire, and was additionally a Chief Officer in the two former Local Authorities. My background is as a clinical doctor with specialist training in public health medicine. I hold a medical degree (MBChB) and Fellowship of the Faculty of Public Health ("FFPH") by examination alongside other formal qualifications. These include a BSc in pharmacology, a master's degree in public health ("MPH"), a master's degree in business administration ("MBA"), a postgraduate diploma in health economics evaluation and a postgraduate certificate in strategic planning and commissioning. I am also a Fellow of the Chartered Management Institute, a visiting Professor of Public Health at the University of Chester and an Honorary Fellow of the Faculty of Occupational Medicine ("FFOM"), the Faculty of Public Health and the Royal College of Paediatrics and Child Health ("FRCPCH").

1.5. The Rule 9 covers a period during which I held two consecutive but distinct roles: firstly, that of DCMO, and then that of CEO of the newly formed UKHSA. Whilst I was appointed to the latter role on 1 April 2021, I did not take on any formal operational and professional leadership role until 1 October 2021. The Department of Health and Social Care ("DHSC") led on the restructuring programme necessary to establish UKHSA. From 1 April 2021, I also shadowed Baroness Harding of Winscombe in her role as Executive Chair of NHS Test and Trace until 7 May 2021, following which I inherited that role.

1.6. As the Inquiry is aware, UKHSA and the OCMO are distinct and separate entities. In making this witness statement, I have relied upon my own personal recollection of events, as well as the records available to me at UKHSA. I have also had access to some material held by the OCMO from my time as DCMO, albeit these documents are no longer in my control.

1.7. I have endeavoured to respond to the Rule 9 to the best of my ability. In some instances, to provide the necessary context, I have referred to the minutes of meetings at which I was not present, or to documents prepared or advice given by others. Some of the requests made of me in the Rule 9 fall entirely outside my direct knowledge. In certain instances, other individuals will be better placed to assist the Inquiry with its work than I am. Where I have felt this to be the case, insofar as I am able, I have indicated accordingly.

Section 2: The role of Deputy Chief Medical Officer and its working relationships

Role of the DCMO

2.1. As at early January 2020, my responsibilities as DCMO were primarily in respect of the health promotion and health services public health portfolio. This included responsibility for technical and professional advice on non-communicable diseases, preventative medicine (primary, secondary and tertiary), pharmaco-public health, and professional registration. It also included specific responsibilities for professional advice on screening, reproductive health, specialised commissioning, workplace health and rare diseases. The health protection portfolio, which in normal times includes the surveillance, monitoring and emergency response to infectious diseases, was held by Professor Sir Jonathan Van-Tam.

2.2. Whilst it follows from the division of responsibility between myself and Sir Jonathan that I was not involved in the immediate direct response to COVID-19 in early January 2020, I was aware of the outbreak, initially in China and then wider Asia, and had some knowledge of the activity being undertaken both in the OCMO and across wider Government in response. As the threat from COVID-19 became progressively more apparent over the first three months of 2020, I became increasingly involved in the emergency response. At first this was gradual, with my early work relating to the management and repatriation of travellers from abroad (for example, from Wuhan and the Diamond Princess cruise ship) and the quarantine facilities established at Arrowe Park Hospital and Milton Keynes.

2.3. By February 2020, the response to COVID-19 had come to dominate both my work and the broader activity of the OCMO. This remained the case throughout my time as DCMO, during which I contributed to a number of relevant advisory groups, co-chaired (as clinical co-chair) the SAGE Social Care Working Group ("SCWG") for a short period from early summer 2020 following the first COVID-19 wave, and led clinical work on the shielding programme, including leading the clinical workstream to deliver the Q-COVID risk stratification tool.

2.4. As DCMO, I attended or participated in SAGE and was for a short time co-chair of three PPE boards within DHSC, a topic I cover in more detail below.

Working relationships with senior leaders

2.5. Throughout the pandemic the OCMO's role, and by extension my own as DCMO, was to provide medical and scientific advice to Government. As DCMO, this was most often at ministerial or departmental level, for instance with the Department for Education. Frequently, I would be required to provide advice to government departments in parallel to that being provided by the CMO and Sir Jonathan. It will not be a surprise that events during the pandemic were fast moving and the calls for advice from the OCMO were many, often requiring swift responses.

2.6. The CMO and DCMOs liaised with each other to ensure that we gave consistent advice in a manner which was easily understood. In formulating that advice, we drew on available publications, research data as it emerged and our own professional experience. As is usual in the medical and scientific communities, we would challenge each other's provisional views before reaching a consensus. The intent was always to provide the best practical advice on the basis of the current evidence within the timeframe available. My contact with the CMO and Sir Jonathan was effectively daily (or more) from the onset of the pandemic until I ceased to be DCMO.

2.7. Whilst the CMO had the lead role, as the work of the OCMO continued during the pandemic there was a natural division of labour between the three key clinicians. Each of us focused on leading where possible in the areas to which we could best bring our previous experience to bear. The CMO is an expert in infectious diseases, whilst Sir Jonathan had direct experience of vaccine development and the pharmaceutical industry. My prior experience in addition to health protection emergency incident response included health and care services and their commissioning and delivery, local council functions, particularly community services and public health, and the devolved nations' health systems.

2.8. Notwithstanding the above, the requirements and pressure of the pandemic meant that the previous distinction in the role of DCMO for health protection and DCMO for health promotion inevitably waned. The focus of the entire Office was on the response to COVID-19. There was therefore considerable crossover in the issues we covered, and which individual gave advice on a particular topic in response to short notice requests would often be dictated simply by their availability at the time a request came in. It is important

to stress that the sheer volume of requests coming into the OCMO meant that we were often required to give advice at very short notice to exceptionally tight deadlines. In compliance with good medical practice, where a topic or area arose over which I had limited prior knowledge and/or experience, I would whenever possible try to ensure this was considered by those with appropriate experience. This principle also governed the ways of working within OCMO and, where feasible, led to the division of labour I have identified in paragraph 2.7 above.

2.9. In addition to my contact with individuals in the OCMO, I engaged with other senior figures as follows:

i. the CMOs for Scotland, Wales and Northern Ireland: the UK CMOs worked very closely and as DCMOs we usually joined their calls. We frequently exchanged information with our counterparts in the other 4 UK nations. There were 286 UK CMOs' calls during the relevant period. I would update the meeting on those aspects of the pandemic response which I led on or were engaged with, for instance the clinical workstream of the shielding programme.

ii. Public Health England: I worked with PHE on guidance as part of the 'triple lock'. From 25 May 2020, the cross-government 'triple lock' clearance process was introduced so that all Government guidance relating to public health was cleared through: i) PHE; ii) OCMO; and iii) the Government Digital service and No.10 in a process coordinated by the Cabinet Office guidance coordination team **(Exhibits JH5/001 [INQ000224011], JH5/002 [INQ000224012])**. Accordingly, my engagement with senior individuals in PHE was frequent in relation to publications, as well as specific topics requiring my professional input, challenge or linkage. PHE often led on technical aspects of the COVID-19 response or where their staff had specific expertise. It is also routine practice as well as a requirement of continuing professional development amongst registered healthcare professionals to continuously learn with regard to new science, evidence and interventions. I would therefore also engage *ad hoc* with key individuals to better understand a developing picture in a local area, the global epidemiology or the detail behind a recent research paper.

iii. Amanda Pritchard and Sir Simon Stevens (Chief Executive Officers of NHS England) and Professor Sir Stephen Powis (National Medical Director of NHS England): My main points of contact with NHSE were: Sir Stephen on clinical matters; Professor

Sir Keith Willet (subsequently Dr Michael Prentice), Dame Pauline Philip and Stephen Groves on urgent care and emergency response; and Professor Jane Cummings and Dame Ruth May for nursing matters including infection prevention and control ("IPC"). There were many meetings I would have attended at which Sir Simon would have been present, predominantly those with the Secretary of State for DHSC. There were also opportunities to engage prior to press briefings and many of those named above were part of the senior clinicians group chaired by CMO England.

iv. the Chief Nursing Officers ("CNOs") for England, Scotland, Wales and Northern Ireland: my main interaction was in the form of occasional exchanges of technical information on specific areas, particularly IPC guidance and predominantly with the CNO for England. My interaction with NHSE was however primarily via Sir Stephen;

v. the professional bodies representing the interests of healthcare workers: This is a broad descriptor which includes bodies representing: i) non-union professional technical interest groups such as the Faculty of Public Health and Royal College of Physicians; ii) unions representing healthcare workers, such as the British Medical Association and the Royal College of Nursing; and iii) those bodies representing non-union professional interests, but where the prime focus of their work is the workplace, whether for healthcare or other workers e.g. the Faculty of Occupational Medicine. The CMO met with the Medical Royal Colleges 65 times between January 2020 and June 2022, and I attended these meetings on a number of occasions. I also worked closely with the Royal College of Paediatrics and Child Health, the Royal College of Obstetrics and Gynaecology ("RCOG"), the Faculty of Public Health and the Faculty of Occupational Medicine, predominantly to triangulate evidence on a topic-by-topic basis and to understand expert views, for example the risk of serious outcomes in different trimesters of pregnancy, to school aged children and to frontline healthcare workers. I received a letter from the BMA relating to the guidance around medical grade facemasks **(Exhibit JH5/003 [INQ000118178])**, to which the PPE policy team responded **(Exhibit JH5/004 [INQ000421844])**. I do not recall meeting representatives of the TUC. If there was contact, it was infrequent.

2.10. My role as DCMO brought me into contact with individuals working in frontline NHS roles, for instance when meeting representatives of the Medical Royal Colleges or charities. This provided valuable insight into the practical realities facing frontline healthcare staff. In some cases, this would be a particularly detailed understanding, for example when linking

with individual clinicians on conditions relating to the work on Q-COVID and the clinically extremely vulnerable group. I actively continued to link with Directors of Public Health right across the country and with junior doctors with whom I had worked previously in order to get as clear a picture as possible of how communities were managing at any point in time and in different geographies. Although I did not personally work in a frontline clinical role during the pandemic, within the OCMO we benefitted from the CMO's continued clinical work at University College London Hospital. On a more personal level, I was also very aware of the challenges facing those working on the frontline because my daughter, with whom I had regular virtual contact, was working in acute medical hospital settings during the pandemic.

Section 3: The role of CEO of UKHSA and its working relationships

Role of CEO UKHSA

3.1. UKHSA was established as an executive agency of DHSC on 1 April 2021 and became operational on 1 October 2021. UKHSA's role is to protect the public from both infectious diseases and external hazards such as chemical, nuclear and environmental threats. UKHSA brings together the health protection, clinical and scientific functions of PHE with the activities of NHS Test and Trace ("NHSTT") which from April 2021 included the Joint Biosecurity Centre ("JBC"). In addition to the predecessor organisations mentioned, key components of the Vaccine Task Force ("VTF") were also incorporated from 30 September 2022.

3.2. As at 1 April 2024, UKHSA comprised five groups led by Directors General and five led by Directors: Clinical and Public Health; Science and Research; Data, Analytics and Surveillance; Health Protection Operations (which incorporated Testing Operations); Strategy, Policy and Programmes; Finance and Corporate Services; Commercial; People; Technology; and the COVID-19 Vaccine Unit. Active redesign for functional effectiveness and efficiency is ongoing.

3.3. It is important to note that UKHSA is, foremost, the UK's health protection and science agency. It does not have responsibility for broader aspects of the healthcare system beyond those predominantly public health protection functions which relate to prevention,

assessment, mitigation and response to external hazards to health, including infectious disease and the science agenda supporting that role. The role therefore includes services such as laboratory services, outbreak investigation, specific areas of scientific response (e.g. AMR) and emergency response. UKHSA provides expert advice to, rather than routine patient care or operational activity within, the health and care system. However, the organisation works closely with other services in all of its work, including that of emergency response. Much of UKHSA's work supports or contributes to NHSE management, for example data modelling provision of hospital bed utilisation, evaluation of the effectiveness of interventions such as vaccination and technical advice on antimicrobial resistance. Overall responsibility for the broader healthcare system, its capacity management and planning, lies with the NHS and DHSC.

3.4. As Chief Executive, I am responsible for the leadership and management of UKHSA and the delivery of its objectives. After the initial transfer period, I was also appointed as Accounting Officer for the majority of UKHSA's programmes. I am responsible for the appropriate utilisation of the public funds for which I have formally received charge; ensuring propriety, regularity, value for money and feasibility in the handling of those public funds; and for the day-to-day operations and management of UKHSA. I am also responsible to DHSC for establishing UKHSA's strategic and business plans in light of the Department's wider strategic aims and agreed priorities, for informing DHSC of progress in helping to achieve the Department's policy objectives in so far as they relate to UKHSA's functions and duties, and for demonstrating how resources are used to achieve those objectives. I also acted as SRO for coordination of the Enhanced Protection Programme for those who may remain more clinically vulnerable to serious outcomes from COVID-19 following vaccination.

3.5. As CEO of UKHSA, I have interactions with the following:

i. the CMO and DCMOs for England. This builds upon our existing professional relationship from my time as DCMO. There is a formal professional line of accountability between myself and CMO separate from, and in addition to, my line management reporting to the Permanent Secretary at DHSC. This is an intentional arrangement given the CMO's advisory role which is designed to ensure he and his deputies are fully informed as to UKHSA's work, any technical developments in the field of public health, or developing risks of which he may need to be aware. In addition,

the CMO is my formal Responsible Officer within the General Medical Council's regulatory system for medical professionals. One DCMO (usually that for Health Protection) attends UKHSA's Advisory Board as a formal member. This provides an opportunity for scrutiny and engagement with the Board's actions. In addition, the CMO for England and other UK nations' CMOs are able to attend and speak at board meetings as observers.

ii. the CMOs for Scotland, Wales and Northern Ireland: I have close engagement with the other UK CMOs. Again, this builds on relationships developed during my time as DCMO and through direct longstanding links with both policy and health protection staff in the respective health protection organisations. I am invited to 4 nations CMOs' calls where I will share any recent or urgent health protection issues, confirm our professional and operational linkages with health protection teams for any incident responses, and am available to answer questions the UK CMOs may wish to raise relating to UKHSA's activities or knowledge.

iii. Public Health Scotland, Public Health Wales and Public Health Agency Northern Ireland: I meet regularly with the chief executives of the other UK nation's public health bodies. In my view, there is generally good alignment and coordination between the public health agency leaders, coordination of actions between nations and sharing of information. This remains the case even if there may be challenges at a political level. This is helped significantly by longstanding shared technical groups and incident response arrangements, including cross border exercises, the continued siting of some UKHSA experts in other UK countries (e.g., Cardiff and Glasgow) and because health protection professionals' careers cause them to move frequently between the different organisations.

iv. Amanda Pritchard, Sir Simon Stevens and Sir Stephen Powis: I have a close working relationship with Sir Stephen (as Medical Director for England). We co-ordinate across a range of areas, including UKHSA's public health protection activities, technical advice for IPC in NHS settings, testing provision for healthcare workers and NHS capacity modelling. Sir Simon left the NHS before UKHSA became operational. Given the reduction in national cross organisation meetings directly related to the COVID-19 response, I now have less engagement with Amanda Pritchard. There is however an existing arrangement by which we can consult rapidly on a need-to-know basis on any matter of importance should it arise (i.e. communication on an 'open access' basis), as well as more infrequent strategic meetings which we both attend.

v. the CNOs for England, Scotland, Wales and Northern Ireland: In England, the CNO is employed within NHSE and so my main professional linkage is through the NHSE Medical Director or on a topic-by-topic basis e.g. IPC. Nevertheless, I have a similar 'open access' arrangement with the CNO to the one described above with Amanda Pritchard. Further, UKHSA has a Deputy Director for nursing and allied health professionals who maintains frequent contact with professional colleagues, escalates issues to me as required, and links with nursing colleagues in other UK nations.

vi. medical professional bodies (e.g., BMA, RCN, the Medical Royal Colleges and TUC): I have limited engagement with the professional unions, save to the extent that they interact with UKHSA in respect of their union activity representing UKHSA's employees. I alternate personal chairing of the internal UKHSA Staff Partnership meetings which includes wider (e.g., BMA) union representation. I have positive and well-established relationships with other professional bodies and professional interest groups, for instance the Faculty of Public Health and the Association of Directors of Public Health.

Section 4: Classification of COVID-19 as a High Consequence Infectious Disease ("HCID")

4.1. I have been asked about my involvement, if any, in the decision in March 2020 to re-categorise COVID-19 from an HCID.

4.2. To give context it is useful to outline the process for the classification of HCID pathogens and the system by which decisions are made to move them to different groups. This is an important consideration because the characteristics of a pathogen, its transmission and the relative certainty in the available evidence base pertaining to those facts are key determinants which underpin a pathogen's classification. This in turn influences the resulting management of a disease, including issues such as the transport of samples, testing roll outs and health service guidance.

4.3. To assist the Inquiry, I have therefore repeated some observations found in the second corporate witness statement provided by the CMO and submitted on behalf of OCMO for Module 1 of the Inquiry **(Exhibit JH5/005 [INQ000184638])**.

4.4. A novel emerging infectious disease is likely to be treated as an HCID whilst its characteristics are still becoming known. That is a sensible and prudent measure when case numbers are limited, and the disease's epidemiological properties are uncertain. It is sensible to act with an abundance of caution – there is much to gain if, with the benefit of growing evidence, the disease is found routinely to be characterised by the criteria relevant to an HCID, and the relative downsides of a cautious approach are few in circumstances where the number of cases are low.

4.5. Thereafter, it will be important to maintain an HCID designation where appropriate. Typically, this will be for diseases with a very high infection fatality rate. It is for this reason that certain haemorrhagic fevers, Ebola, MERS and pneumonic plague remain on the HCID list. These diseases often have a case fatality rate in the general population which exceeds 1 in 10, in many cases by some margin.

4.6. It is important however to differentiate the risks posed by a disease such as COVID-19. Whilst COVID-19 was a serious public health threat, its fatality rate was not of the same magnitude as those other diseases on the HCID list. The HCID list records high mortality and usually low UK prevalence infectious diseases. It is these types of disease which categorisation as an HCID and (should cases arise) management in the HCID network are intended to address. Treatment protocols for those with an HCID requires ill patients to be transported to specialist units around the country for admission in appropriate accommodation. Managing patients in an HCID setting is highly resource-intensive, and the provision of such specialist beds is highly limited.

Re-categorisation of COVID-19's HCID status

4.7. I had minimal involvement in the decision to reclassify COVID-19 so that it was no longer classified as an HCID. It was however a decision which I thought was reasonable.

4.8. COVID-19 was first categorised as an HCID on 10 January 2020 by the Advisory Committee on Dangerous Pathogens ("ACDP") while more was learnt about the disease. At this time, it was a novel infection of which there had been no reported cases in the UK. There was considerable uncertainty around, for instance, the disease's infection fatality

rate. We also knew it was a coronavirus, and so in the same family as MERS and SARS, which were and remain HCIDs by virtue of (predominantly) their high case fatality rate. This was a sensible approach given the number of confirmed cases and our state of knowledge of the disease in January 2020.

4.9. The practical consequences of designating COVID-19 as an HCID included ensuring the patient was placed in respiratory isolation and that PPE as described in the infection prevention and control guidance, first issued on 10 January 2020, was worn by any person entering the room **(Exhibit JH5/006 [INQ000101202])**. As a minimum, this would be a correctly fitted FFP3 respirator, gown, gloves and eye protection. Confirmed airborne HCIDs, which COVID-19 was initially classified as, were also managed in specialist HCID treatment centres. There were 5 interim Airborne HCID Treatment Centres in England, each of which had basic surge arrangements in place.

4.10. Urgent diagnostic testing for any patient with suspected COVID-19 was required. At the time, COVID-19 was also classified as a containment level 3 pathogen which required stringent safety measures. As a consequence, testing for COVID-19 could initially only take place in designated laboratories with the facilities and procedures in place to prepare hazardous clinical materials for testing. In general, where pathogens are appropriately handled at a lower containment level, then greater testing capacity will be generated with the same facilities capacity.

4.11. By the end of February 2020 and into March 2020, as cases rose and domestic community transmission became established, a number of factors prompted a reconsideration of the classification of COVID-19 as an HCID: i) the evidence increasingly showed that COVID-19 did not meet the criteria to be designated an HCID; ii) it became progressively clearer that many would suffer only a mild disease; and iii) cases were steadily more widespread.

4.12. On 28 February 2020, I joined a telephone conference chaired by Sir Keith, Strategic Incident Director for COVID-19, NHS England, at which the re-categorisation of COVID-19's HCID status was raised. This followed a briefing note prepared by NHS England which observed the following **(Exhibits JH5/007 [INQ000421819], [JH5/008 INQ000269921])**:

"… to be designated as an HCID, an acute infectious disease is expected to be difficult to detect and with a high case fatality ratio. Covid-19 on current evidence does not meet these criteria. It does however require a nationally coordinated response.

Operationally the continuation of HCID status for COVID-19 will result in exhaustion of HCID capacity within days. It is now appropriate and pragmatic recognising the large numbers, family groups etc. that we expect in the next period that we should now consider appropriate modification to the current approach…"

4.13. To the best of my recollection, I did not thereafter have further significant input into the decision to declassify COVID-19 as an HCID. HCID categorisation was, properly, a matter for the Advisory Committee on Dangerous Pathogens ("ACDP") and the UK Four Nations HCID Definition and List Group. Individuals in those groups will be better placed than I to assist the Inquiry with the mechanism by which that decision was taken.

4.14. I have also been asked to outline my understanding as to the practical implications of the recategorisation of COVID-19 on guidance. The practical implications of the decision were that confirmed cases of COVID-19 were handled in wider infectious disease specialist treatment centres in line with surge planning, and subsequently, once there were widespread infections across the whole population, within the breadth of the healthcare estate.

4.15. It was not my role as DCMO to draft guidance and I do not have a recollection of being asked to advise on proposed guidance being issued following the recategorisation of COVID-19. My expectation would have been that, once the recategorisation decision was made, decisions on the content of IPC or PPE guidance then fell to be made on the basis of what was necessary and appropriate for the management of the pathogen given its characteristics. This is the same approach as would be adopted for any other infectious disease. For instance, Mpox is a recent example where there has been partial declassification linked specifically to clade. That approach would also, I expect, have applied to the Hospital Discharge Service Requirements guidance dated 19 March 2020, on which the Inquiry has invited me to comment. This is reflected in the fact it is operational guidance, published by the NHS.

Section 5: Health system capacity

ICU capacity as of March 2020

5.1. The question of whether there is or was sufficient Intensive Care Unit ("ICU") capacity in the UK is a more nuanced and complex one than it may initially appear. It is also an area which lends itself poorly to direct comparisons with countries abroad.

5.2. Firstly, the ICU capacity of the health service is not a simple question of the number of ICU beds. There are a variety of settings in hospitals which can accommodate patients with additional clinical needs. These include ICUs, high dependency units ("HDUs"), and a variety of other specialist areas on inpatient wards which provide for closer observation and more intensive nursing than a traditional ward bed. In many instances, such units will be staffed by specialists in intensive care medicine. In other cases, however, they may be staffed by, for instance, respiratory doctors or acute physicians. The distinctions between these settings and the ratio of staff to each bed will not always be clear and will vary between settings. The need for high dependency intervention and the length of time it is utilised also varies considerably by the effectiveness of early warning trigger systems on general wards and critical care outreach teams. Simple comparisons of ICU capacity on a per capita basis may therefore be misleading depending on the definitions of ICU employed and the asks made of such settings.

5.3. It is difficult to conceive of any country which would have adequate pre-existing ICU capacity to deal with the requirements of a population wide severe respiratory pandemic such as COVID-19. In that regard, the UK was no exception. Whether it had sufficient capacity to mitigate, at least in part, the worst effects of such a pandemic, ultimately depends on the concomitant expectations on other parts of the health service and how quickly mitigations (such as vaccines), therapeutics and clinical management techniques could be developed and implemented. During COVID-19, in particular the first wave of March 2020 and the subsequent wave which began in December 2020, much of the non-emergency surgery which would ordinarily occur in the NHS was postponed so that ICU capacity could be made available for COVID-19 cases.

5.4. There were concerns early in the pandemic that NHS capacity, particularly ICU capacity, could be exceeded. The methods by which ICU capacity was increased at short notice

were ultimately operational issues for the NHS which fell outside my role as DCMO. It included steps such as requisitioning areas such as theatre recovery for use as additional ICU capacity. Whether it is desirable to maintain surge ICU capacity, or for that matter surge capacity in any aspect of the health system or public health response to an emergency, as well as how much of its typical activity the NHS is expected to maintain throughout any incident, is ultimately a political decision. It is properly taken by elected politicians in light of the competing demands on their resources and their prioritisation of spending in line with other elements of preparedness and response.

5.5. It is therefore not possible to identify with precision a 'right' or 'sufficient' level of ICU capacity for any given scenario, as this would need to reflect the complex interplay of those factors I have identified above, as well as the ability of the healthcare system to reorganise services as necessary to meet periods of heightened demand. Nevertheless, it is uncontroversial to observe that the NHS routinely runs at high levels of occupancy and is a system in which there is relatively little spare capacity. This inevitably makes responding to periods of increased demand more challenging.

5.6. In recognition of the uncertainty of sustainable ICU capacity, there was some discussion regarding the potential to support frontline clinicians through the development of a decision aid tool should service capacity be breached. I am not aware that any central guidance was produced or published on this point. The NHS managed the significant demand of patient flow during the pandemic and decision-making remained at all times in the hands of those delivering care on the frontline. The need for a tool to support decision-making ceased once it became clear that ICU capacity would not be exceeded.

Concerns in relation to oxygen supply

5.7. I was aware of concerns about oxygen supply systems in hospitals in England, but only insofar as these either occasionally featured in updates to which I was privy or were raised generally in the public domain. Infrastructure matters such as this would have been an operational matter for DHSC, the NHS and hospital trusts themselves. I was not involved in decisions as to how to address problems with oxygen supplies nor was there any need to involve me. It was an operational issue on which others were far better placed to advise.

DNACPR

5.8. I do not recall directly discussing or providing advice on the use of DNACPRs during the relevant period. I would not have expected to do so as their use would be an operational matter. I recall it being anticipated that the difficult question as to how DNACPR orders might be managed in the event of a severe pandemic could arise, albeit to my recollection this was largely, if not entirely, in the form of informal discussions. There was a clear concern amongst all clinicians that the pressure of the pandemic had the potential to make what is an already difficult area of medical practice even more challenging. The issue was particularly relevant and a realistic one to raise in light of events in Italy, where health services had been overwhelmed. There was again a risk that if the issue was not considered, such decisions would ultimately have to be made at a local level, with the potential for differing and inequitable approaches. I do not recall any central guidance being delivered. Rather, there was thinking and guidance from relevant specialist groups within the medical profession.

5.9. By the autumn of 2020, I was aware of concerns reported in the media, about the use of DNACPR orders earlier in the year. Guidance from the winter onwards stressed the importance of personalised clinical decision-making, the involvement of individuals and their families, and that blanket DNACPR orders were never appropriate. The guidance is exhibited at **(Exhibits JH5/009 [INQ000090007], JH5/010 [INQ000109755])**. To my mind this did nothing more than restate the proper position.

Discharges from hospitals in March 2020: rationale

5.10. I am aware that the issue of discharging medically fit patients from hospitals in March 2020 is of particular interest to the Inquiry. Whilst I provided some technical professional advice on relevant clinical and public health areas, including hospitals, the question of hospital discharge was an operational matter for DHSC, the NHS and the wider healthcare system. It would not have been something which I, as DCMO, would have had a significant role in advising upon. The general principle that it is desirable to free up beds by discharging those patients well enough to go home, however is an accepted part of the NHS's contingency plans for any major incident and a logical approach applied in other arenas and by other professionals, for example, Defence Services. I reflected both that view, and that discharges were an anticipated part of pandemic planning, in the technical advice I

gave. It may assist the Inquiry if I set out the basis for why I think discharges were an appropriate course of action by outlining some well recognised clinical principles applicable to the decision, with which I agree.

5.11. Firstly, at times of extreme demand, there is a clear and obvious benefit to making beds available for the patients that need them. Put simply, if patients appropriately arrive at the hospital for care and cannot be accommodated, they are likely to become at greater risk of harm. When there is a sudden demand on bed capacity, for instance at the beginning of a pandemic or following a multi-casualty event, preventing this heightened demand from going unmet by freeing up beds through the discharge of patients is clearly logical.

5.12. Secondly, it is well established that keeping medically fit patients in hospital when they do not need to be there is detrimental to their health. There are a variety of reasons for this. Patients in hospital are inevitably more sedentary, and so at greater risk of various conditions including deep vein thrombosis and pneumonia. They are, at least to some extent, deprived of their autonomy and freedom, that deprivation in itself being undesirable without good reason. Patients in hospital are deprived of the benefits of their normal surroundings. For some elderly patients, those recovering from clinical states of confusion or infection, and those with dementia, it can be of particular importance to be in their normal environment. It is well evidenced that for some, physical and mental stress and deterioration can follow any reduction in their time spent with trusted, recognised carers. Further, being an inpatient exposes an individual to the risk of hospital acquired infections. This was all the more so in an infectious respiratory pandemic, where cases were foreseen to be necessarily actively admitted to the hospital on a recurring basis. Remaining in hospital when fit for discharge therefore exposes patients to an avoidable risk of harm. Even in normal times, prompt discharge once a patient no longer requires hospital admission should be seen as the norm and something to be encouraged.

5.13. Thirdly, it is important to remember the context in which decisions were being made in March 2020. As of 16 March 2020, SAGE was advising that there was a real risk of NHS capacity being exceeded **(Exhibit JH5/011 [INQ000075664]).** There was therefore an imperative to increase NHS capacity where possible and discharging those patients who were medically fit was a sensible tool to achieve this.

5.14. I understand that it has been suggested that those patients who were fit for discharge should have been kept in hospital or tested prior to discharge. It is important when considering such a suggestion to avoid hindsight and there were, at the time, practical difficulties which would have made the adoption of such measures unfeasible:

i. there were, as of March 2020, very few tests available. They were primarily needed for diagnostic purposes to identify which patients had COVID-19. Tests were therefore not available to test people prior to discharge. Even if tests had been performed, there would then have been a period during which the individual could have acquired the disease in hospital whilst awaiting their result after they were tested, even if that initial discharge test subsequently returned a negative result;

ii. similarly, a negative test would only have identified that the individual was not positive at the time the test was performed. It could not differentiate whether an individual was incubating the disease at that time having already been infected, and so would become unwell shortly thereafter. Those returning a negative result could reasonably have posed a risk of developing a positive test and being infectious in the 10-14 day period following discharge and therefore isolation was of more importance in transmission control than a single negative discharge test; and

iii. there was no appropriate place to accommodate such patients pending their test result. Whilst some patients may have been self-caring, others would have required significant nursing care in order to be kept safe (indeed, this is why many required discharge to nursing homes). This was at a time when there was a pressure both on the availability of beds and staff in hospitals.

5.15. It is also important to note that subsequent analysis has shown that the majority of infections introduced into care homes came not from the discharge of medically fit patients from hospitals but were unwittingly imported by staff **(Exhibit JH5/012 [INQ000234332])**. There was therefore strong logic, subsequently evidenced, in rolling out routine testing approaches to health and social care staff as a priority testing intervention.

Discharges from hospitals: advice

5.16. I described the advice I gave in respect of this issue in my fourth witness statement provided to Module 2 of the Inquiry. I reproduce the relevant parts of that account in the seven paragraphs set out below.

5.17. On 14 February 2020, after being asked to support the discussions on adult social care planning in the reasonable worst case scenario (RWCS), I contacted colleagues at NHSE to request further information on their pandemic preparations and how these would interact with the adult social care sector **(Exhibit JH5/013 [INQ000151466])**.

5.18. On 18 February 2020, I attended a meeting at which the urgent need to develop guidance and a RWCS for the adult social care sector was discussed. This involved further consideration as to the impact on adult social care should NHS pressures become so great that patients needed to be moved into community settings in order to relieve pressure on acute hospital beds **(Exhibit JH5/014 [INQ000151491])**.

5.19. On 16 March 2020, when case numbers were rising acutely one week ahead of the first lockdown, I was contacted by the senior official for social care at DHSC who was seeking to understand the practical reality and public health implications of the potential future management of those in care homes who were elderly and likely to fall within the clinically vulnerable or shielding policy. This was because it was likely that, to maintain hospital capacity effectively, less acutely ill patients would need to be returned to their usual residential settings, including care homes where relevant. DHSC's working assumption was that appropriate discharges would require strict infection control once patients were transferred from the NHS. In response, I confirmed my understanding of this approach to manage overall clinical risk and capacity, being aware of the exponential rise in COVID-19 cases in the UK and having observed the early experience in Northern Italy and other countries where care demand had been overwhelmed **(Exhibit JH5/015 [INQ000151606])**.

5.20. On 1 April 2020, I provided my comments to DHSC on a "dear colleague" letter being drafted to go from the Secretary of State for DHSC to MPs to update on emergency response preparations. The content was centred on the acute health sector. Amongst

other comments, I flagged both the omission in the draft, and the critical importance, of ensuring that care staff and the criticality of their work to the nation's response was recognised. I was concerned to ensure they, and the needs of the care sector more generally, were continuously considered as response plans progressed. I observed **(Exhibits JH5/016 [INQ000151693], JH5/017 [INQ000151694]**:

> "*I would just like to reiterate that without the care system keeping clients/patients at home and accepting rapid discharges from hospital the NHS will quickly become overburdened however many ventilators, treatments or staff we have acquired. Therefore we need to ensure that care staff outside the acute sector are continuously mentioned throughout any public and formal correspondence — care homes are already anxious about accepting covid-19 discharges and we are not yet seeing epidemic size patient influx*"
>
> and
>
> "*The out of hospital care sector, whether in care homes or domiciliary, will be critical in stopping patients appropriately going into hospital and supporting rapid discharge when acute bed capacity is critical. The two workforces are inextricably linked but we alienate one very regularly."*

5.21. On 4 April 2020, I had a conversation with the Minister for Social Care in which the issue of hospital discharges to care homes was discussed as well as the potential for nosocomial infection within the care home environment. Following this, I made enquiries with DHSC, GO-Science and the NHS about whether the SAGE nosocomial subgroup was already considering the care sector specifically or was planning to do so. The GCSA replied confirming the intention was to consider care homes and other healthcare settings outside hospital.

5.22. I am aware that in an email of 14 April 2020, the CMO's advice was that testing within care home settings was a priority following concern highlighted by a recent study of 39 care homes indicating potential high rates of nosocomial transmission **(Exhibit JH5/018 [INQ000068798])**. The issue of ingress into residential settings was one of significant clinical consideration, including at the SCWG where workstreams were delivered on an

ongoing basis through the pandemic to support testing policy development and changes including for individuals being discharged from acute care settings to care homes. However, despite clinical support for discharge testing to be undertaken as soon as possible, testing was not initially available at the scale necessary to achieve the objective. Any system of testing prior to discharge from hospital into care home settings would have been dependent on there being sufficient tests available, as well as ensuring the appropriate process parameters — such as time of test, time period over which a test remained valid, turnaround time of the test result etc — were agreed and evidence based. These were fundamental considerations for the SCWG work programme.

5.23. In my view, capacity for all hospital discharges to be tested was not available in April 2020 and therefore such a policy could not have been effectively implemented. In addition, and as noted at paragraph 5.14 above, discharge testing did not remove the need for effective isolation, including good IPC, in reducing the risk of infections into and within residential care settings.

Section 6: Understanding of SARS-CoV-2, IPC measures and PPE within healthcare settings

6.1. It may be of assistance to the Inquiry if I make a preliminary observation on the methods by which science advances and how this translates to risk and risk mitigation in relation to COVID-19 transmission and impact.

6.2. It is generally the case that scientific understanding evolves with time. It is rare that something is 'unknown' and then becomes 'known', or that a concept is not understood but then becomes clear. Usually, evidence accumulates over time so that, as time progresses, an understanding develops in which those practising in the field have increasing confidence. This was particularly true in the case of COVID-19. As a wholly novel disease, our initial understanding was particularly uncertain. Over time, the evidence accumulated and our knowledge grew.

Asymptomatic Transmission

6.3. The significant distinction between asymptomatic cases and asymptomatic transmission is important. References to asymptomatic cases describe individuals who become infected but do not display symptoms. Even this is a more complex concept than it may appear. It may be that an individual does not display symptoms because they do not have any. Alternatively, it may be the case that an individual develops symptoms, but those symptoms are so minor they are either not noticed by the patient ('pauci-symptomatic') or are not attributed to the infection and so the patient reports being asymptomatic. In both cases the epidemiological consequence is similar; people who are infected cannot readily be identified solely by the presence of symptoms, and the absence of symptoms is not in and of itself conclusive evidence that an individual is not infected.

6.4. There is then a separate issue as to whether asymptomatic cases are themselves capable of spreading the infection. It is this which is properly referred to as asymptomatic transmission, in which an asymptomatic case is capable of generating new infections in others. The concept of asymptomatic transmission is itself further complicated as it is again not a binary phenomenon which is simply either present or absent. It is frequently the case that asymptomatic cases will be less infectious than symptomatic ones. Indeed, even symptomatic cases will vary in their infectivity over time. It follows that whether there is asymptomatic transmission or not is a complex question. Even if asymptomatic transmission is possible, its importance in driving an epidemic or pandemic may be difficult to ascertain with confidence, particularly early on in a pandemic, and will depend on the relative infectiousness of asymptomatic and symptomatic cases.

6.5. Finally, a further related concept is that of pre-symptomatic transmission. In such cases the patient has the capability to be infectious before they develop symptoms, but ultimately they will develop symptoms with time. They therefore cannot be considered to be demonstrating asymptomatic transmission.

6.6. Our understanding of both asymptomatic cases and asymptomatic transmission evolved over the course of the COVID-19 pandemic as our knowledge of the disease improved. It was, however, something of a moving goal. Our knowledge and understanding was constantly required to be generated from historic exposures whilst also responding to the

emergence of new variants with potentially different characteristics and symptoms, as well as the epidemiological context, for instance, the roll out of the vaccine programme.

Chronology

6.7. On 4 February 2020, the WHO released a strategic preparedness and response plan, summarising the available evidence on COVID-19 transmission **(Exhibit JH5/019 [INQ000087457])**. The report outlined that, at the time of writing, modes of transmission of COVID-19 were likely to be similar to those of Middle East respiratory syndrome coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome coronavirus (SARS-CoV). Notably, these diseases were not considered to display high levels of asymptomatic cases or asymptomatic transmission.

6.8. That same day, PHE presented a paper to SAGE on asymptomatic transmission **(Exhibit JH5/020 [INQ000074909])**. In this paper, PHE assessed the extant evidence for asymptomatic transmission of 2019nCoV (subsequently known as COVID-19) and compared this to what was understood of viral shedding and asymptomatic transmission in the closest known genetically related virus, SARS-CoV in humans. The paper noted that the available data at the time for 2019nCoV did not provide evidence for major asymptomatic or sub-clinical transmission although it also indicated the limitations of available data. On 10 February 2020, in response to an inquiry from DHSC about the decontamination of coaches, I stated **(Exhibit JH5/021 [INQ000151437])**:

> *"JvT and / have discussed briefly.*
>
> *Science:*
>
> *…*
>
> *• We do not yet have full understanding of the epidemiology of transmission including asymptomatic transmission although all passengers were well when they boarded the plane…"*

6.9. On 19 February 2020, I discussed with colleagues at DHSC, PHE and NHSE the risk that potentially asymptomatic positive patients would be found by proactive testing of patients

in managed quarantine who had been repatriated from the Diamond Princess cruise ship. This was in relation to plans at that time to manage such individuals in an HCID setting if they returned a positive test **(Exhibit JH5/022 [INQ000151496])** and what we were learning of the epidemiology of successive recurrent exposures on the cruise ship. I outlined my concern that: "*from the developing epidemiology, we might expect a high number of asymptomatic positives in any exposed cohort".* My concern as I recall was that I was not confident about the robustness of the epidemiological data being provided from what was a very unusual, repeatedly exposed cohort, and that testing may therefore reveal a number of cases in those apparently recorded as 'asymptomatic' cases. This reflected the reported nature of exposure on the ship, in particular from incomplete isolation on board the vessel, the differing times of release, the ongoing mixing of passengers and crew as well as relatively poor data quality.

6.10. On 24 February 2020, PHE's National Infection Service produced a strategy document which described the understanding at the time **(Exhibit JH5/023 [INQ000074910])**. This stated that "*there is very limited evidence of transmission from asymptomatic cases. It is assumed that the substantial majority of transmission is from symptomatic individuals with COVID-19*".

6.11. On 27 February 2020, SAGE provided a RWCS for COVID-19 **(Exhibits JH5/024 [INQ000106129], JH5/025 [INQ000074896])**. Amongst its conclusions, the RWCS stated:

> "*8. SAGE agreed that the case fatality rate (2-3%) remains the same, but the fatality rate for the overall infected population (identified and unidentified cases) is closer to 1%. This better reflects the expected proportion of mild and possible asymptomatic infections…*"

6.12. The evidence of asymptomatic transmission began to increase in strength from the end of March and early April 2020. For example, on 3 April 2020, the US Centre for Communicable Disease Control released data on a study of residents in a long- term facility. This found 57% of those with positive test results were reported to be asymptomatic at the time of testing. The majority of these (10 out of 13) went on to develop symptoms in the next 7-day period, however 3 were identified as remaining asymptomatic

despite their positive tests. This gave evidence of a relatively small proportion of asymptomatic cases **(Exhibit JH5/026 [INQ000348269])**.

6.13. Nevertheless, this evidence was by no means conclusive. It is a good example, however, of scientific understanding changing over time. By way of illustration, only the day before the WHO was still only identifying asymptomatic transmission as a possibility. Its report on that date stated **(Exhibit JH5/027 [INQ000074894])**.

> *"Data from published epidemiology and virologic studies provide evidence that COVID -19 is primarily transmitted from symptomatic people to others who are in close contact through respiratory droplets, by direct contact with infected persons, or by contact with contaminated objects and surfaces…*
>
> ***Pre-symptomatic transmission***
>
> *The incubation period for COVID-19, which is the time between exposure to the virus (becoming infected) and symptom onset, is on average 5-6 days, however can be up to 14 days. During this period, also known as the "pre- symptomatic" period, some infected persons can be contagious. Therefore, transmission from a pre -symptomatic case can occur before symptom onset.*
>
> *…*
>
> ***Asymptomatic transmission***
>
> *An asymptomatic laboratory-confirmed case is a person infected with COVID-19 who does not develop symptoms. Asymptomatic transmission refers to transmission of the virus from a person, who does not develop symptoms.*
>
> *There are few reports of laboratory-confirmed cases who are truly asymptomatic, and to date, there has been no documented asymptomatic transmission. This does not exclude the possibility that it may occur. Asymptomatic cases have been reported as part of contact tracing efforts in some countries"*

6.14. In response to this developing awareness, between 3 and 13 April 2020 PHE carried out two studies in care homes. The first was a whole genome sequencing study in 6 care

homes (the "Easter 6 Study"). The second was an enhanced surveillance study with repeat swabbing in 95 care homes.

6.15. On 15 April 2020, PHE began to receive initial results from the Easter 6 Study. The Easter 6 Study was the largest international dataset and strongest evidence to date showing that it was likely that the virus was being transmitted asymptomatically and that staff played a key role as a vector of asymptomatic transmission. This was one of the first studies to give a strong indication of asymptomatic transmission **(Exhibit JH5/028 [INQ000089681])**. Data from it was presented to NERVTAG on 24 April 2020 and to SAGE on 12 May 2020 **(Exhibit JH5/029 [INQ000120161], JH5/030 [INQ000061543])**.

6.16. The Easter 6 study was of significant importance in improving understanding of the extent of asymptomatic infection and transmission. As with all studies however, it had its limitations. Further, it still needed to be interpreted in the context of all the other evidence available at that time. SAGE summarised what remained an uncertain understanding on 14 May 2020 **[JH5/031 [INQ000120519])**:

> "***Asymptomatic cases and infection***
>
> *30. NERVTAG has reviewed various studies on asymptomatic infection. Many do not differentiate between asymptomatic or pauci-symptomatic individuals and pre-symptomatic individuals.*
>
> *31. SAGE noted that longitudinal sampling in the ONS study will assist in clarifying this difference going forward but needs to include more than "asymptomatic on the day of infection".*
>
> *32. Taking all evidence into account, between 10% and 35% of individuals may be truly asymptomatic (low confidence), and many more may have few symptoms. Review of ONS data will help refine the estimate.*
>
> *33. It is possible that asymptomatic individuals are less infectious, but this cannot currently be quantified. There is a key knowledge gap concerning how positive testing correlates with the presence of live, recoverable virus (for example infectiousness), although PHE is currently investigating this*"

6.17. By the autumn the position was becoming clearer. At the beginning of September, from a PHE review of 22 studies, NERVTAG concluded that 28% of those with COVID-19 were asymptomatic with Ct values similar across symptomatic and asymptomatic patients **(Exhibit JH5/032 [INQ000120434])**. On 13 September 2020, when seeking to ensure all avenues for mitigation of infection in care homes were thoroughly explored, I advised **(Exhibit JH5/033 [INQ000152802])**:

> "*We do know that a large number of staff and residents will have asymptomatic disease where cases exist*".

6.18. It is therefore correct to observe that over time, the OCMO's understanding of the significance of asymptomatic transmission, informed by the developing evidence and advice from SAGE, evolved considerably. In my view, this reflects the uncertainty at the beginning and the proper approach to the accumulation of scientific knowledge.

Impact on IPC guidance and PPE

6.19. In general, it was not my role during the pandemic to author guidance. This applied to IPC and PPE guidance as much as it did to any other. PHE's role was to advise on scientific evidence whilst it would be for the NHS to translate that understanding into operational guidance. Frequently, I would be shown such guidance and would sense check it as well as contribute my understanding based on my knowledge at the time. As we in the OCMO were asked to review many pieces of guidance, we also had a role in trying to ensure guidance aligned across sectors. This was however a difficult task due to the sheer volume of publications, their disparate authors across many government departments, and the pressured working conditions during the pandemic.

6.20. The OCMO's role in advising on IPC and PPE is set out at sections 6 and 7 of the corporate statement made on behalf of the OCMO for this module. For the sake of brevity, I do not repeat that material again here. That account accurately sets out my recollection.

6.21. Personal protective equipment is used in different settings by different groups of people for different protective reasons. Even within healthcare settings, responsibility for advice

will sit with different organisations and individuals (for example, each acute hospital trust will have a Director for Infection Prevention and Control) for different settings or standards. There is further a distinction between technical, scientific guidance and operational guidance. Finally, there are specific governance routes/controls relating to testing of equipment, procurement and distribution of products.

6.22. In general, technical guidance on PPE was properly the domain of HSE and PHE, whilst DHSC and NHSE held responsibility for operational guidance within the care sector and NHS respectively. BEIS provided more general workplace guidance which might extend to some relevant working areas of practice. My role was to provide clinical insight and challenge where appropriate. I cannot now recall detailed discussions regarding the impact of shortages on PPE guidance. As outlined above, this was not something for which I as DCMO would have had responsibility. It would have properly fallen within the remit of those at NHSE with ownership of the operational response.

6.23. For a short time, I did co-chair alongside Jonathan Marron, Director General of Prevention, Community and Social Care at DHSC, the PPE Oversight Board, PPE Four Nations Oversight Board and PPE Other Government Department Board (also referred to as "the PPE OGD Forum"). The purpose of these temporary Boards was to help coordination and establish more sustainable governance at a time when PPE supplies were limited **(Exhibits JH5/034 [INQ000381181], JH5/035 [INQ000151641])**. The intention was to facilitate a sensible distribution of PPE at a time of limited supply and limited robust information, rather than to undertake any logistical role. They existed only for a short time until fixed governance arrangements were put in place by DHSC and NHSE. My main role and contribution was to facilitate high level conversations between different professional groups and across the 4 UK nations, in particular with a view to ensuring that the PPE available was distributed in as logical a way as possible, and in line with the clinical activity and services we knew were being provided in each major clinical setting. It was a role I ceased to perform by early May 2020. Copies of the Terms of Reference are exhibited **(JH5/036 [INQ000381190], JH5/037 [INQ000106342]** and **JH5/038 [INQ000381202])**.

6.24. It is both good scientific practice and healthy in terms of generating robust perspectives, that different views are signalled and discussed routinely in advisory groups. This was no

different for the Four Nations IPC Cell representatives and those from other organisations.

6.25. I was aware that there were different perspectives held by PHE and the Four Nations PPE cell, although I was not a member of that cell and did not routinely participate in their detailed discussions It was unsurprising however that the two bodies had different perspectives and that differences of opinion arose given their different roles. Broadly, PHE were responsible for scientific technical evidence, whilst the Four Nations Cell was responsible for incorporating that information into operational guidance which could be of practical assistance in healthcare settings. Accordingly, whilst PHE would provide guidance based on the predominantly scientific understanding, the Four Nations Cell would inevitably need to take into account what was translatable and feasible in operational settings if their guidance was to be practical and useful. Guidance could be expected to change over time with the arrival and/or generation of new evidence. My involvement was to support shared understanding of the science so that those responsible for authoring operational guidance could incorporate it as best as they were able.

6.26. In December 2021 the emergence of Omicron as a new variant prompted calls from some key stakeholders and professionals for changes to the extant guidance which had been agreed previously by consensus through the Four Nations IPC cell, and in particular on the use of FFP3s. On 7 January 2022, I chaired a roundtable discussion on respiratory PPE, particularly FPP3s, attended by representatives from DHSC, the Four Nations IPC Cell, NHSE, HSE and the public health agencies of the four UK nations **(Exhibit JH5/039 [INQ000348432])**. The purpose of this meeting was to ensure a shared understanding of the current evidence and sense check the guidance to ensure that it was clear. I had no personal authority to change the operational guidance. That rested with the Four Nations IPC cell. The meeting supported the existing guidance in relation to FPP3s, but recognised that the wording used in the guidance could be made clearer for healthcare worker use. That view was informed by the suggestion that FFP3s were not being used as often as the guidance supported. The key action from the meeting was that the Four Nations IPC cell, with some support from the UKHSA, would work on the wording to make it more "enabling" of the use of FPP3s in appropriate settings, as had originally been intended. No other material changes to the guidance were made.

Mode of Transmission

6.27. At the outset, I repeat my observations at paragraph 6.2 above about the way in which scientific understanding develops and improves over time.

6.28. It was readily apparent from the early reports in January 2020 that COVID-19 was an infection transmitted by the respiratory route. This in turn had three separate components which were considered to be of potential importance in the case of COVID-19: fomite, droplet and aerosol spread. The international scientific consensus on the relative importance of these different transmission routes shifted as new evidence emerged.

6.29. In the early part of the pandemic, the evidence available supported the hypothesis that close contact with infected people via droplets remained the most likely principal route of transmission, and uncertainty remained about the fomite route. Over time, the evidence began to show that long range airborne transmission by the aerosol route was increasingly important. This made ventilation and distance all the more important in preventing transmission. That evidence accumulated gradually over the course of 2020 and into 2021.

6.30. Accordingly, it would be wrong to say that there came a specific point at which our understanding in the OCMO changed in that one mode of transmission suddenly became prominent above the others. I do not recall any particular trigger which caused our understanding to change. It was, in reality, a gradually evolving picture of the degree to which they relatively contributed. It is likely that some characteristics of transmission changed over time as different variants emerged. Over the course of the pandemic, my advice increasingly reflected this developing appreciation, and the associated importance of interventions such as ventilation **(Exhibits JH5/040 [INQ000152684], JH5/041 [INQ000152712], JH5/042 [INQ000152842])**. That did not however mean that it was reasonable to discount those precautions aimed at droplet transmission.

6.31. The evolution of the understanding of COVID-19 transmission routes is covered in detail in the Technical Report at chapter 1, a document to which I, and many others, contributed **(Exhibit JH5/043 [INQ000177534]).**

AGPs

6.32. The list of aerosol generating procedures ("AGPs") in healthcare settings was initially derived by NERVTAG and reviewed on several occasions by PHE representatives and others. I was not part of the original evidence meetings although the topic was discussed subsequently by the senior clinicians group when I was in attendance. I had no specific or formal role in advising on the list of AGPs in healthcare settings. This was properly the responsibility of PHE to review the scientific evidence, for HSE to consider workplace health and for NHSE to issue operational guidance to staff within health settings.

6.33. I would however contribute specific advice or support evidence generation or consensus development if requested. On 25 March 2020, following a widely represented meeting at which I was present, consensus on the list of AGPs was reached and FFP3 masks were advised. In addition, it was noted that FFP2 and FFP3 masks both needed to be fit tested but that either could be used for AGPs given the very limited difference in filtering efficiency from 99% to 95% for fine particles when using FFP2s as opposed to FFP3s. This position was endorsed by NERVTAG, ACDP and HSE. The list of AGPs included chest compressions **(Exhibit JH5/044 [INQ000381182])**. There were, at that time, extremely constrained supplies of respirators, and so they were prioritised for staff performing the highest risk activities. Alongside this, there was a recommendation that FFP2s also be sourced.

Testing in hospitals

6.34. On 10 March 2020, a tripartite coronavirus letter published with the support of the OCMO advised **(Exhibit JH5/045 [INQ000203878])**:

> "***Individuals presenting at hospital***
>
> *To improve case detection in those with no geographic link, patients who require admission to hospital should be tested* ***regardless of travel history*** *if they present with*

Clinical or radiological evidence of pneumonia or acute respiratory distress syndrome
OR
Influenza-like illness

Infection prevention and control measures whilst awaiting test results, including isolation and cohorting of patients, should be implemented in line with your Trust seasonal influenza operational plan."

6.35. Thereafter, on 13 March 2020, I commented on the importance of testing hospital inpatients, as well as the desirability, if the supply of tests allowed, of testing frontline staff so as to prevent nosocomial transmission **(Exhibit JH5/046 [INQ000151587])**.

6.36. On the weekend of 28 to 29 March 2020, the testing of symptomatic key workers, including NHS staff, formally began (as explained at exhibit **(Exhibit JH5/017 [INQ000151694]**). This coincided with efforts to increase the supply of tests. It goes without saying, however, that our ability at this time to introduce widespread testing of staff remained constrained by the supply of tests. There was also good logic in initially prioritising those tests which were available for hospital patients, whose treatment would be informed by the result.

6.37. The limitations of testing capacity in general applied equally to the testing of healthcare workers. I highlighted the same in an email on 27 May 2020, in respect of how to manage those healthcare workers who had been contacts of a confirmed COVID-19 case, in particular the limited conclusions which could be drawn from such an individual returning a negative test **(Exhibit JH5/047 [INQ000152041])**. There were also competing considerations in relation to the need to balance the effect on patient safety from having potentially infectious individuals in the workplace, against the serious issues for staffing (and accordingly, patient safety) if well staff were required to isolate unnecessarily.

6.38. By winter 2020, the availability of verified point of care tests meant that it became feasible to undertake asymptomatic testing of NHS staff. I had limited involvement with the expansion of lateral flow device testing to NHS staff, responsibility for which primarily lay with NHSTT.

Nosocomial Transmission

6.39. Nosocomial infections are a risk for many diseases. Each winter, norovirus outbreaks are a considerable cause of morbidity (and even mortality) in NHS hospitals. Infections such as MRSA and CPE require stringent measures to try and prevent their spread within healthcare settings.

6.40. Accordingly, it was inevitable that for any new pathogen spread by the respiratory route there was a risk of nosocomial spread. That knowledge additionally built upon other nations' experience in managing MERS and SARS. It was therefore likely nosocomial transmission would be a risk in COVID-19, especially as cases mounted.

6.41. On 30 March 2020, I attended a senior clinicians' meeting at which a paper was discussed on the extent of nosocomial spread in hospitals **(Exhibits JH5/048 [INQ000381193], [JH5/049 INQ000381194])**. Its significant risk was thus recognised early on in the pandemic. By 17 April 2020, evidence had begun to emerge which suggested that whilst the community epidemic was beginning to plateau following the introduction of nationwide non-pharmaceutical interventions, there was ongoing transmission within hospitals and care homes **(Exhibit JH5/050 [INQ000068842])**. Further information outlining the extent of nosocomial infections was provided to SPI-M-O soon thereafter **(Exhibit JH5/051 [INQ000120648])**.

6.42. Nosocomial infections are ultimately a consequence of:

i. The need to admit infected individuals to hospital. By admitting them to hospital, they will be brought into close proximity with other patients and staff who are not infected;
ii. The need for staff to provide close personal care, which creates a high risk of transmission; and
iii. The levels and robustness of IPC arrangements within the healthcare setting.

6.43. Nosocomial infections in patients may occur either by transmission from patient to patient or staff to patient, either directly or through hazard pathways such as environmental surfaces, air distribution systems etc. The advice I gave on minimising their impact and extent would therefore have been reflected in the comments I provided on PPE and IPC

measures. I have outlined my involvement in the processes by which IPC and PPE guidance was produced elsewhere in this statement.

6.44. Advice on nosocomial infection was provided by the Hospital Onset COVID-19 Working Group, a subgroup of SAGE and evidence provided to that group by PHE and other academic and research groups. I was not a member of this SAGE working group. I describe the advice I gave in respect of risk assessments for healthcare workers below.

Section 7: Risk assessments and regulatory regime

Occupational Health

7.1. In summer 2020, I was involved in discussions concerning occupational risk assessments for healthcare staff and provided advice on that topic. I did not initiate those assessments as that was not my role. I did however advise on some aspects of their introduction once I became aware of them. In particular, I was concerned that the process being implemented, whilst well intentioned, actually risked promoting inequality amongst some healthcare staff and was not founded on a strong evidence base.

Ethnicity

7.2. In June 2020, I was asked to comment on a draft COVID-19 Adult Care Risk Reduction Framework (Assessing and Reducing the Risk to your Workforce). My views drew on wider discussions with the HSE and the Faculty of Occupational Medicine, as well as with the SAGE subgroup on ethnicity and those directly researching social and clinical inequalities at that time, including Professor Kamlesh Khunti and Professor Kevin Fenton **(Exhibits JH5/052 [INQ000152109], JH5/053 [INQ000152110])**.

7.3. In commenting on the adult social care guidance, I noted **(Exhibit JH5/052 [INQ000152109])**:

"5. Risk —the evidence on risk is changing. Age is probably far more significant than any of the others mentioned, including ethnicity. Suggest all statements on risk need to be very cautious. Unfortunately the NHS document on which this is based was drafted hastily and almost too early. It did not assess confounding factors in any way so the statements on risk need caveating heavily with 'potential risk' and 'may be at increased risk' etc"

7.4. The NHS document I was referring to had been published, in quite short time. It was developed at a time when the very limited evidence base underlying it was still developing and therefore the true absolute or relative risk to individuals was not properly ascertained.

7.5. I became aware of that document following its publication and became concerned that in some cases, advice was being given on the basis of only limited evidence. This risked unnecessarily and inappropriately impacting the important roles individuals played, causing disproportionate anxiety for some and detracting from robustly elucidating the key underlying modifiable risk factors. I was also concerned that there seemed to be very limited attention being paid to issues such as sensory disability.

7.6. It was understandable that the inevitable lack of early reliable evidence of individual risk from a novel pathogen deepened the anxiety for individuals, families and communities, particularly those already dealing with illness or inequality. Nevertheless, a number of important documents appeared to have little in the way of sensitive information and advice and did little to facilitate a proper risk discussion. I tried to support some of these areas during my routine work.

7.7. On 9 June 2020, I provided feedback intended to assist DHSC in responding to a Government Equalities Office inquiry. I noted both the risks of inappropriate use of isolated statistics and, in summary, some relevant wider issues for ethnic minority workforces in healthcare **(Exhibit JH5/054 [INQ000152140])**:

"*I am very fearful that we will get reverse inequality long term if we are not very careful how this is managed: for example lack of BAME opportunity in senior positions —for example BAME banished from frontline roles and therefore career*

development in NHSE, where the trend in equality has only just started to be turned"

7.8. Work continued on the issue of occupational health over the summer, during the course of which there was a decision to pause shielding on 1 August 2020. Ultimately, I chaired a series of roundtables in early summer which reached a consensus view on the issue and outlined the principles which all employers, including the NHS, should follow when considering risks to staff. I exhibit the final paper from these at **(Exhibit JH5/055 [INQ000421846])**. This described the principles to be applied to assessments of occupational risk going forward and ultimately linked to work on QCovid, a tool to provide a much more nuanced risk assessment on which individuals and their healthcare professional could base more personal decisions. I then reflected the outcome from the occupational health roundtables in my further advice on occupational risk throughout the year.

Pregnancy

7.9. Recognising the changes in immune status that routinely accompany pregnancy, and the importance of the early months of gestation, close proactive attention was paid to international, and then national, reports of any potential harmful impact from the COVID-19 virus on pregnant women and their offspring from the start of the pandemic. Pregnancy is also a protected characteristic under the Equality Act 2010. Given the uncertainty and, as noted above, a developing evidence base, a precautionary principle was applied in workplace advice for pregnant women **(Exhibits JH5/052 [INQ000152109], JH5/053 [INQ000152110])**. I had similar concerns in respect of pregnant women as I had voiced in respect of ethnicity, given that many staff in acute settings seemed to be automatically prevented from working. I commented: "*3. Risk assessment discussion should be WITH an employee for them to have say in their own risk perception and handling. It should not be DONE TO them —which is the general perception here… A pregnant woman who wishes to continue working when fully aware of any potential risks should have her own views considered equally*". That was not, however, to say that it was not important for pregnant women to be alert to the risks of COVID-19 when pregnant, which I return to below.

7.10. I liaised directly with the then President of the Royal College of Obstetricians and Gynaecologists (RCOG), Dr Eddie Morris, to ensure alignment and cross-referencing of RCOG guidance wherever possible and subsequently publication of workplace guidelines on the DHSC website on 23 December 2020, with input from HSE and the Royal College of Midwives (RCM). In addition, anonymised specialised maternity service data, held by a very limited number of obstetricians, was linked to COVID-19 risk assessment work, such as Q-COVID, to provide evidence for risk statements to high risk women such as those with congenital heart disease. I do not otherwise recall having detailed conversations about the specific occupational health risks to pregnant healthcare workers at this time. This would have been an operational matter for others within the NHS. Pregnant women would also have benefitted from the general advice being provided to the clinically vulnerable and clinically extremely vulnerable which I set out below.

The clinically vulnerable

7.11. I discuss the assessment of occupational risk to the clinically vulnerable in the context of the broader shielding programme below at paragraph 9.31.

Healthcare Regulation

7.12. CQC inspections were suspended on 16 March 2020. I was aware that this would happen, but it was not a decision in which I had involvement. I do not recall providing substantial advice on the issue. Nor do I recall providing substantial advice on the issue of the expansion of the medical workforce. The OCMO was asked to advise on GMC proposals to re-register certain groups of doctors at the end of March 2020. I was broadly content with the plans envisaged but did highlight specific concerns in relation to the duration of emergency re-registration and the risks that doctors who might otherwise have been subject to disciplinary hearings could be re-registered inappropriately **(Exhibit JH5/056 [INQ000151658]).**

Section 8: Pregnant women and maternity services

Maternity services during COVID-19

8.1. On 14 March 2020, DHSC approached the CMO and myself seeking our views on the risks of pregnancy in the context of COVID-19 and recommendations on treating pregnant women as a vulnerable group. I liaised with the President of the RCOG at the time. Pregnant women had been included within the clinically vulnerable group based on principles of a recognised risk from infectious diseases such as influenza.

8.2. On 17 March 2020, I provided comment on draft advice from the RCOG on the risks of COVID-19 in pregnancy **(Exhibit JH5/057 [INQ000151609])**. I advised a very careful approach to guidance wording because there was limited evidence on which to draw firm risk conclusions in this early phase of the pandemic. From experience of managing health incidents over long periods of time, I know it is important to ensure that statements do not have to be withdrawn, changed or retracted once issued, because this risks losing trust. The approach therefore is always to consider what might happen in the future and ensure the statements reflect both the current truth and the opportunity to include factual evidence in a coherent way as new evidence develops. As an example, regardless of the direct risk *from* COVID-19, it is sadly inevitable that there will be a death in a pregnant woman *with* COVID-19 during the pandemic (for example in a car accident). Having statements therefore that categorically rule out an inevitable event which may be linked together in the public's mind will likely undermine the key risk messages which it is important should be received.

8.3. On 18 November 2020, the OCMO responded on my behalf to DHSC regarding a statement on the risks to pregnant women from COVID-19 in which I agreed some wording which also recognised foetal as well as maternal risk assessment **(Exhibit JH5/058 [INQ000071707])**.

8.4. On 1 December 2020, I provided comments on the draft health service user guidance "Supporting pregnant women using maternity services during the coronavirus pandemic: actions for NHS providers" **(Exhibit JH5/059 [INQ000071973])**. I advised a number of changes to the draft wording to manage more safely the balance of the

recognised needs and expectations of the pregnant woman and her partner to attend such an important life event whilst also maximising safety for the woman, her new baby/babies, healthcare staff and other patients. It appeared that the initial guidance was drafted with a view to 'exchanging' a negative lateral flow test to manage all other transmission risks. My contributions sought to facilitate attendance as the main objective whilst managing risk through clear identification of the need to use sensitive and specific tests, to continue with all routine IPC arrangements and particularly to recognise the support required to non-routine visitors to healthcare settings to maintain effective IPC behaviours when they may not have been used to them. The final guidance was overseen and cleared by NHS England and published on 14 December 2020.

8.5. Beyond the above, I do not recall providing any detailed advice on operational aspects of the provision of obstetric services. This would not have been my role, and others (e.g. obstetricians and doctors delivering care in maternity units) would have been far better placed to advise on such matters.

Section 9: Shielding and the clinically vulnerable

Overview

9.1. There is a degree of crossover between the Inquiry's requests in the rule 9 letter sent to me and those made to the OCMO as a corporate entity. Where necessary and appropriate, I have therefore reproduced certain material which I contributed to the OCMO's corporate witness statement made in Module 3, in order to provide the necessary context here.

9.2. The assessment of risk to those designated as CEV or CV during the relevant period, developed as our understanding of the virus evolved. Risk assessment, and the metrics and analysis which underpinned it, necessarily was considered from several angles. As DCMO with responsibility for clinical development of the CV and CEV groups, I led this work throughout and was personally involved in all elements of the programme. I had ultimate responsibility for the clinical definition elements of the programme as clinical SRO and led later work on the Enhanced Protection

Programme (from December 2021 onwards). I also held a lead role in enabling cross system coordination within the health elements of the programme.

9.3. In order to reach a consensus on the definition of CEV (and CV), an ongoing analysis of our understanding of risk factors predisposing to poor COVID-19 outcomes was required so that the risks from exposure to the virus with the physical and mental health risks of following shielding advice could be balanced. Shielding was always advisory, and this was made clear at all times in guidance and other public health messaging, but if a CEV individual was to follow the advice stringently, they would potentially remain at home for weeks at a time. The ongoing risk analysis required to support decisions around the definition of the CEV group was carried out via a consensus driven, conditions-based approach initially, in the absence of any robust data on COVID-19 outcomes. As data from the first wave in the UK accrued, the risk analysis was widened to include a data-driven approach. Ultimately, both approaches were necessary to ensure that a precautionary but proportionate approach to the measurement and analysis of risk was taken. More detail on this can be found in paragraphs 9.15-9.27.

9.4. Once the CEV and CV groups had been defined, there was a requirement for ongoing analysis of how the prevailing wider epidemiology intersected with the need for advice to the CEV cohort to follow restrictive shielding guidance. More detail, including on my role in providing the rationale for advice to pause and restart shielding advice, can be found below at paragraphs 9.29-9.30.

9.5. There was a particular need to understand risk from COVID-19 in the workplace to those designated as CEV whilst shielding was paused from 1 August 2020. I chaired a series of cross-government roundtables with representation from the four nations, Medical Royal Colleges, occupational health clinical experts representing particular sectors, the HSE, DHSC, PHE, NHSE and the Cabinet Office, to agree a clinical and policy position to support advice and guidance produced by government departments clarifying the duties of employers when dealing with CEV employees returning to work.

9.6. There were on occasions difficulties in accurately communicating the nature of the programme both within Government and to the public. It is important to note that whilst

the concept of voluntary shielding, as implemented, was understood within the OCMO and DHSC, the term was often understood differently by other parts of Government (see, for instance, the Inquiry's Module 2 hearings transcript at [Nov 8/96/14]). Furthermore, similar, or even identical terminology was frequently employed by others, including scientific advisors, when discussing fundamentally different concepts (see, for instance, the Inquiry's Module 2 hearings transcript at [Oct 16/57/11]). The differing use of the term made consistent communication more challenging. In the programme that was implemented, we tried to balance the competing views as far as possible and ultimately to deliver a practical, pragmatic but sensitive approach to what was a very complex programme, using the principles set out in this statement, and with the constantly evolving understanding and assessment of clinical risk from COVID-19 at its core.

Reaching a Definition of At-Risk Groups

9.7. SAGE recommended shielding of the most at-risk patients in early 2020 and ministers agreed the policy. At every stage of the shielding programme there was a balance of risk consideration. Shielding conceptually was likely to reduce the exposure of an individual, the incidence of infection and therefore reduce the risk of severe disease in the most vulnerable. Conversely, it could potentially lead to significant distress, loneliness, risk of increased fear and practical limitations on the lives of those shielded, even in addition to the effects of lockdown. It made provision of medical and other care for people with non-COVID related conditions more focused but in some cases practically more challenging. Clinicians, including myself, recognised these risks from before the start of the programme. Adding people to the shielding list if they were not actually at risk was not in their interests, and balancing the potential benefits and dis-benefits of shielding for the individuals concerned was central to clinical decision making.

9.8. With these as the principles underpinning the assessment of risk towards those potentially being advised to shield, there were two main approaches utilised to enable the understanding, analysis and measurement of risk towards the CV and CEV

groups and taken at different stages of the pandemic. These evolved as data accrued and understanding grew about the nature of the risk from COVID-19 towards particular groups.

9.9. The two main approaches taken were: 1) a conditions-based approach; and 2) a data-driven approach to develop a predictive risk model (QCovid). QCovid was a peer reviewed, published multivariable model which was initially derived from first wave data to enable a cumulative risk score to be calculated for an individual. This risk score would allow estimation of the risk of catching and then being hospitalised or dying from COVID-19 based on the presence of an individual's risk factors. The model was independently validated in two separate datasets which: i) showed that the model performed in the 'excellent' range in ranking people by their level of risk; and ii) indicated it would be safe to use accurately in the wider population.

9.10. QCovid ultimately enabled the population of England to be stratified according to their risk of catching and dying from COVID-19 using either absolute or age- and sex-matched relative risk. Risk thresholds were agreed by the UK CMOs. A decision was then taken by the Secretary of State to proceed with using QCovid to identify individuals who fell within the agreed risk thresholds to add to the Shielded Patient List (SPL). As the pandemic progressed, there was overlap between the conditions-based and data driven approaches. From February 2021 until the end of the programme in September 2021, the SPL comprised individuals from cohorts identified using both approaches.

Chronology

9.11. The chronology below is reproduced from the corporate statement submitted on behalf of OCMO for this module. It will, I hope, give the reader an understanding of how different cohorts were added to the SPL over time and how that related to the wider Shielding Programme as it developed.

5 March 2020	SAGE discussed need for vulnerable groups to be identified and protected

9 March 2020	Government commissioned the development of an offer of support for CEV people who may need to shield at home.
18 March 2020	UK CMOs agreed criteria for who was to be advised to shield.
20 March 2020	First iteration of Shielded Patients List produced by NHS Digital using a centralised digital approach on coded patient records. (867,789 CEV identified in SPL 1). Digital search is re-run and the SPL updated weekly.
21 March 2020	NHS begins advising people meeting the CMO's clinical criteria to follow shielding guidance.
22 March 2020	Secretary of State for Housing, Communities & Local Government announced CEV people should stay at home - at which point shielding started.
27 March 2020	First food boxes delivered.
9 April 2020	Medicines delivery service began.
9 April 2020	NHSE asks GPs to identify and add CEV people to the Shielded Patient List (10th April for clinicians in NHS Trusts).
12 April 2020	Cumulative 1.3 million people identified as CEV (additional 417,639 added since 20 March).
18 April 2020	Cumulative 1.8 million people identified as CEV (additional 561,845 added since 12 April – single biggest increase, driven by GP and clinician review of SPL).
22 April 2020	UK CMOs recommend the addition of all patients on dialysis to the CEV group.
1 May 2020	SPL 3 – cumulative 2.16m identified as CEV (addition of 316,033 since 18 April, again primarily driven by GP and clinician additions).

1 May 2020	CMO commissions NERVTAG to combine all available evidence and develop a new predictive risk model, which incorporates emerging relevant risk factors such as age, sex, BMI, deprivation and ethnicity, alongside detailed clinical conditions and specific treatments.
7 May 2020	Shielded Patients List stabilised at 2.2 million CEV people (net increase of 49,320 since 1 May – from here on there is little significant change to size of SPL as GP and clinician review completed).
29 June 2020	QCovid underlying research methodology published (preprint) ahead of peer reviewed publication in BMJ and subsequent validation by ONS (published in Lancet Digital Health).
6 July 2020	The advice for CEV people was reviewed to include advice on meeting up to 6 people outdoors and forming a support bubble.
8 July 2020	CMO and NHS Medical Director wrote to all GP practices and trusts with advice that clinicians should review and, where appropriate, remove children and young people from the SPL in line with new guidance from the RCPCH (93k at the time).
1 August 2020	National shielding programme paused (although shielding did continue in Leicester and Blackburn with Darwen until 5 October because of persistent high rates of virus in these areas).
1 August – 5 October 2020	Shielding was continued until 5 October in: Leicester and parts of Leicestershire Blackburn with Darwen Letters were issued to CEV in these areas every 3-4 weeks updating them and extending their shielding notification period so that they would be eligible for support (e.g. SSP).
25 August 2020	COVID-O agrees principles and priorities for developing QCovid to (a) be used by HMG to understand population risk and better target interventions and (b) be used by clinicians to discuss ways to mitigate risk with their patients
30 September 2020	Based on interim findings from QCovid, UKCMOs agree that patients aged over 18 with Down's Syndrome and Chronic Kidney Disease (Stage 5) should be added to the SPL.

20 October 2020	COVID-O updated on options to apply QCovid to patient records nationally to identify a new highest risk group for addition to the SPL. COVID-O agrees that QCovid should be used to set a new highest risk threshold (of 2% absolute and 2% relative risk of death from COVID-19) for this purpose.
5 November 2020	November National Restrictions – CEV advised not to go to work or school. Letter announcing CEV people should take extra precautions during period of national restrictions in November.
27 November 2020	Issued letter to announce end of lockdown and return to tiers.
2 December 2020	JCVI published its final advice on priority groups for vaccination (Phase 1). This prioritised the highest risk clinical risk group, including all those considered by the Government to be CEV.
10 December 2020	COVID-O was updated on plans to use QCovid to support vaccine prioritisation, clinical risk calculator/tool, development and potentially a public facing risk calculator/tool.
21 December 2020	Tier 4 created in SE, London and parts of East England – CEV advised to shield in Tier 4 areas.
30 December 2020	Tier 4 extended further.
6 January 2021	Start of National lockdown – all CEV advised to shield until 21 Feb.
25 January 2021	ONS independently validates QCovid and shows that it performs in the 'excellent' range, and accurately identifies patients at highest risk from COVID-19. This means that the model is robust and meets the highest standards of evidence.
3 February 2021	Ministerial agreement to use QCovid to add previously unidentified highest risk people to the SPL and prioritise them for vaccination.

16 February 2021	Announcement of the adoption of the QCovid risk model in the NHS, adding up to 1.7m adults to the SPL and prioritising c820,000 for priority access to vaccination.
1 April 2021	On the basis that the enhanced risks posed to the CEV by COVID-19 had been sufficiently mitigated following the introduction of vaccination and then therapeutics for this group, the shielding programme was paused. This was outlined in the exhibited letter from MHCLG and DHSC to those on the shielding list (published by PHE on 18 March 2021).
15 September 2021	The shielding programme closed. The CEV were advised to follow the current Cabinet Office guidance to the general public on staying safe and preventing the spread of COVID-19 and to consider advice from individual health professionals regarding additional precautions. General advice on additional precautions to take was also given.

Conditions Based Approach to Analysing Risk

9.12. The initial analysis of the level of risk to those designated as CEV or CV was based upon advice from SAGE on 5 March 2020. SAGE discussed the concept of identifying particular groups who may be more clinically vulnerable to COVID-19 and suggested that '*there is scientific data to support implementation of social isolation (cocooning) for those over 65 or with underlying medical conditions to delay spread, modify the epidemic peak and reduce mortality rates*' **(Exhibit JH5/060 [INQ000106152])**.

9.13. As a result, the Cabinet Office commissioned NHSE and the UK CMOs to scope the definition and size of a group who might be advised to 'isolate and protect'. On 7 and 8 March 2020, senior clinicians from DHSC, NHSE, NHS Digital ("NHSD") and PHE had a telephone meeting, at which I was present, in which options for clinical inclusion criteria for the identification of people thought most likely to be at highest risk from COVID-19 were discussed. At those meetings, and in subsequent email

correspondence, a two-tiered risk-based approach towards protection of CV/CEV groups was agreed:

i. A wider group of approximately 17 million people who were eligible for annual NHS influenza vaccination on account of age or medical conditions who were thought likely to be similarly vulnerable to a novel respiratory coronavirus. Public health messaging and guidance would be created to alert them to their potential increased risk and advise they take extra precautions to avoid contracting COVID-19, but they would not be individually identified or contacted. This group would become the "clinically vulnerable" (CV) group. Pregnant women are part of the 'flu' group – i.e. they are eligible for an NHS influenza vaccination due to vulnerability to flu. As a result, they were included in this cohort. There was, however, review of relevant data throughout the pandemic with the potential to raise a cohort into the CEV group should further heightened risk be identified, e.g. in response to new data.

ii. A smaller group of 1-2 million people who may have been immunosuppressed or have specific conditions likely to confer very high risk from a novel respiratory coronavirus. This group would be proactively identified using existing NHS datasets, and other similar clinical routes and contacted, advised and supported to follow something close to the then extant PHE guidance **(Exhibit JH5/061 [INQ000348021])** for those self-isolating, but for a period of at least 12 weeks. This group would become the "clinically extremely vulnerable" (CEV) group. From 8 March 2020, senior clinicians from DHSC, the Devolved Administrations, NHSE, NHSD and PHE worked to draw up a list of conditions which would form the basis of this highest risk group. It was assumed at the time that this list would be updated as new data came in. The finalised list was therefore checked against any recent information before I provided it to the UK CMOs for their final sign-off. In consultation with RCOG, I suggested the inclusion of pregnant women with 'acquired' significant heart disease in addition to those with congenital heart disease. This reflected the fact that significant heart disease in pregnancy, of whatever origin, combined with the physiological effects of pregnancy, created a concurrent, cumulative increased risk to the pregnant woman. It was simply highlighted in exhibited material to draw the attention of senior clinicians copied into correspondence about the list to the last-minute change, given the collaborative nature of the process that sat behind the original drawing up of the

list of conditions described above. An important additional principle of the CEV inclusion criteria was that hospital specialists and GPs were provided with guidance asking them to add patients who they felt, using their own clinical judgement, were at very high risk of serious outcomes from COVID-19, but who did not meet the conditions based criteria for inclusion on the SPL or were not routinely recorded on data systems which the programme could access to support them. An example would be the frail elderly with multimorbidity who were well known individually to primary care.

9.14. This initial analysis of risk to the CEV groups was undertaken by expert consensus using a conditions-based approach prior to the first wave in the UK, and in the absence of any data relating to COVID-19 deaths or hospitalisations. After its initial creation, the CEV inclusion criteria were maintained and developed by the UK CMOs. A process was developed for revising and updating the definition of CEV by allowing the analysis of new evidence relating to risk. I chaired a Four Nations UK Clinical Review Panel, whose membership included senior clinicians from the Four Nations, nominated by the UK CMOs. The panel usually met weekly, and considered clinical matters relating to the CEV group, including the evolving evidence base relating to clinical risk from COVID-19. The panel considered evidence from a wide range of sources including patient groups, clinical specialist societies, Medical Royal Colleges and academic groups. Where further evidence was needed, the Panel commissioned evidence reviews from NHSE to assist with their deliberations. It then made recommendations based on evidence about changes to the CEV inclusion criteria to the UK CMOs. The panel minutes can be found at **Annex 1**. In making these recommendations the panel weighed up the mental and physical health risks of stringently following shielding advice with the strength of the available evidence about the level of risk for the condition in question. The UK CMOs considered the recommendation and made the final decision about any resulting changes to the CEV inclusion criteria. An account of the decisions taken by the UK CMOs is provided in the corporate statement made on behalf of the OCMO by the CMO.

Data Driven Approach to Analysing Risk

9.15. As data from the first wave of the pandemic in England accrued, the CMO commissioned NERVTAG in May 2020 to produce a data-driven, predictive risk model for COVID-19 deaths, to better understand the cumulative effect of weighted risk factors (demographic and clinical) **(Exhibit JH5/062 [INQ000221965])**. The model (QCovid) subsequently developed, combined a number of characteristics to estimate the risk of catching and then being hospitalised or dying from COVID-19. A key aim was to use data to address health inequalities which had been exacerbated by COVID-19. I was directly involved in the early work to set the direction of QCovid, and I continued to be personally involved in the development of the model via Dr Nisha Mehta, my clinical advisor who led on the detail of all elements of the Shielding Programme for OCMO, including this work, and who reported back directly to me. Dr Mehta co-chaired the NERVTAG epidemiology subgroup, which helped deliver QCovid and which was also co-chaired by Professor Julia Hippisley-Cox from Oxford University who was the lead researcher in the development of the model. Oxford University had been commissioned by CMO to develop QCovid with a view to potentially deploying it nationally using digital technology to enable a population risk stratification.

9.16. The NERVTAG Epidemiology subgroup derived the underlying data for QCovid in the following way: The QResearch database, which is a consolidated database derived from the anonymised health records from general practices of over 10 million GP records, was linked anonymously at individual level to hospital episode statistic, critical care, mortality and cancer registry data. Additional linkages were obtained for cancer treatments and COVID-19 test results from PHE. Linking multiple databases of electronic health care records enabled the creation of anonymous longitudinal records. This allowed NERVTAG to follow a cohort of 6.08 million anonymised patients from the start of the pandemic to identify those who were either admitted to hospital with COVID-19 or who sadly died from the infection. NERVTAG examined their characteristics at baseline to identify which factors were associated with an increased risk of these outcomes, having initially identified a long and granular list of predictors including variables relating to inequalities.

9.17. Using NERVTAG's work, QCovid, enabled a cumulative risk score to be calculated for an individual, based on the presence of individual risk factors. This risk score could be presented either as an absolute or age- and sex-matched relative risk.

9.18. Variables in QCovid included age, ethnicity, deprivation, homelessness and gender, as well as a granular set of clinical conditions and treatments. QCovid was published in the BMJ in October 2020 and externally validated in two separate datasets, including by ONS (published in Lancet Digital Health). It was shown to perform in the 'excellent' range in ranking people by their level of risk (Harrell's C for deaths in females and males was 0.95 (95% CI 0.94 to 0.95) and 0.93 (95% CI 0.92 to 0.93) respectively), which indicated it would be safe to use accurately to identify those at highest risk in the wider population **(Exhibits JH5/063 [INQ000315529]), JH5/064 [INQ000328640]).**

9.19. The UK CMOs considered the results of the QCovid research to establish what risk threshold should be used to determine if someone may be categorised as CEV. The research showed that most people included in the study who sadly died from COVID-19 would have had risk assessment results that placed them in approximately the top 2% of the population in terms of either absolute or age- and sex-matched relative risk. This equated to an absolute risk of 0.5% (or 5 in 1,000)[1] or a relative risk of 10[2] (or 10 times the baseline risk). Having weighed the risks and benefits of advising additional people to shield based on their level of risk and determined that these thresholds should be used for a population risk stratification, an additional cohort of CEV people was identified to add to the SPL.

9.20. NHS Digital built a platform to apply QCovid at scale to centrally held medical records to identify the highest risk patients who had not previously been identified using the conditions-based approach. National implementation required NHS Digital to identify clinical information in existing datasets to detect the specific pieces of information from the records of people with the sorts of clinical characteristics who could potentially be considered high risk (i.e. CEV). Relevant coded data was recorded in 7

[1] Absolute Risk is the overall risk, based on what happened to other people with the same characteristics and risk factors who caught coronavirus and went to hospital or died as a result.
[2] Relative risk is the level of risk compared to a person who is the same age and sex registered at birth, but without any other risk factors.

national datasets. NHS Digital ran this data securely through QCovid to generate risk assessment results.

9.21. On occasions, demographic data would be incomplete. In those circumstances a precautionary approach was taken to records with missing data to deliberately overcompensate to ensure maximum protection, rather than by substituting in a value equating to an average hazard ratio. For example, a higher-than-average BMI (31) was used as a default value to reduce the risk that patients with missing BMI data could be inadvertently disadvantaged.

9.22. The application of QCovid to these national datasets identified 1.7m additional individuals who had not previously been identified as highest risk using a single conditions-based approach. This cohort exceeded the agreed relative and absolute risk thresholds (2% for each) recommended by the UK CMOs. These patients were added to the SPL and became part of the CEV cohort which by February 2021 totalled 3.9 million people.

9.23. This stratification of the population by risk (Population Risk Assessment) also resulted in a change to the individuals who were prioritised for vaccination, with an additional group of around 820,000 adults being prioritised as a result of their inclusion in JCVI cohort 4. The remainder of the 1.7 million patients were already within cohorts 1-3 (mainly due to age or care home residency), and therefore would have been vaccinated before the CEV / cohort 4 group were called.

9.24. Of the 1.7 million 'QCovid' cohort, 86% had an ethnicity recorded, of whom 36% were non-white, compared to 17% non-white ethnicity recorded in the adult population. The local authorities which saw the largest additions to the SPL are areas with high rates of disparities (e.g. Birmingham, Newham, Tower Hamlets).

9.25. QCovid was additionally made available as a standalone calculator to clinicians in primary and secondary care.

9.26. QCovid and the Population Risk Assessment was commissioned and clinically led by OCMO. The UK CMOs reviewed early QCovid data **(Exhibit JH5/065**

INQ000385575]) in October 2020 and agreed in principle that QCovid should be used to risk stratify the population to enable appropriate support, mitigations and personal decision making. The decision to proceed with the risk stratification in England was agreed by Ministers. DHSC led on policy development and data analytics, NHS Digital led on the technical workstreams, NHS England coordinated the involvement of and impact on the NHS, and the University of Oxford led on development and refinement of the model with regular input from the NERVTAG Epidemiology subgroup. The research was funded by the NIHR.

9.27. The Population Risk Assessment and underlying research won a number of awards **(Exhibit JH5/066 [INQ000231743])** and was particularly commended for their focus on addressing inequalities. The Guardian called QCovid a 'much needed algorithm' **(Exhibit JH5/067 [INQ000421849])**. The NIHR independently peer reviewed the QCovid research it had funded. The research and its translational impact were widely praised by the reviewers with uniformly positive ratings relating to clarity of focus, quality of research design, outcomes, value for money and impact of the research on policy and practice.

Overlap between the two approaches

9.28. Individuals identified at the start of the pandemic using the conditions-based approach were added to the Shielded Patients List at the same time that the first wave mortality data was accruing. Therefore, there was a risk that QCovid would underestimate the risk towards people with these particular risk factors as they may have been following protective shielding advice. For this reason, when the Population Risk Assessment (QCovid cohort) of c.1.7m extra individuals was identified (i.e. those who were known to be at highest risk of death due to cumulative, weighted risk factors), it did not replace the original CEV list of those identified using a conditions-based approach, but rather was added. This precautionary approach, resulting in the addition of the two groups, was taken to mitigate any underestimation of risk by QCovid to those with individual conditions.

Risk to the CEV Cohort due to Prevailing Epidemiology

9.29. Once the CEV cohort had been defined, there was an additional requirement to consider changes to the level of COVID-19 risk to the group as a result of changes in the wider prevailing epidemiology relating to the virus, including incidence and community transmission rates both nationally and in some cases locally (e.g. Leicester in summer 2020), and in 2021 our early understanding of vaccine effectiveness. This was important because it was necessary to continually weigh up the balance of risks from following shielding advice (as outlined in paragraph 9.3 above) with the potential benefits of avoiding exposure to the virus.

9.30. As a result, I provided clinical advice which could be used by the Secretary of State for DHSC and Ministers in other Departments could decide when and how changes in the shielding programme were implemented. Whilst there were other inputs my own clinical and epidemiological advice was provided at the following points for the following reasons. To assist the Inquiry that advice is set out in the table below:

When	Policy context	To whom	DCMO Advice
June 2020	Initial guidance on shielding due to expire end of June, advice from DCMO requested on whether to pause the policy for the Clinically Extremely Vulnerable (CEV) cohort of 2.2m people. Epidemiology - Latest epidemiology confirmed a continued downward trend in disease prevalence in England sustained over the previous fortnight aligned with good adherence to social distancing. The likely rise in cases in winter and the prospect of isolation for many months when risk levels were significantly higher were also considered.	DHSC (SoS)	I advised that the incidence rate in the community was sufficiently low that advice for those in the CEV group to shield could be paused. Additionally, test and trace was operational including within schools, and there were robust measures in place to manage potential areas of higher risk which could be a theoretical cause of seeding cases back into local communities (prisons, hospitals, care homes). In addition, my advice reflected the potential risks to mental and physical wellbeing from limited social and physical interaction while shielding advice was retained. I advised that the CEV group could be advised to follow the same guidance as the CV group from the end of June, noting that it was important to maintain the CEV cohort, even if advice was stepped down, to allow for support to be rapidly stepped up again should this be needed in the future. I also noted the potential psychological impacts for those shielding and the need for transitional arrangements and to engage widely any change in policy announcement with patient and clinical groups. Proactive engagement with DAs was completed to ensure

			alignment as far as possible. Advice exhibited **(JH5/068 [INQ000050887])**.
14 July 2020	Local incidence of the virus in Leicester remained higher than for the rest of the country and lockdown was extended for this area.	DHSC	I provided advice on extending the shielding programme in Leicester (three-week time lag) exhibited at **(Exhibit JH5/069 [INQ000152493])**. I also advised that the local epidemic peak would need to return to pre-national peak levels and Leicester lockdown lifted before the CEV advice could be lifted. Taking into account time needed for data to appear in hospital admissions a minimum of three weeks lag was recommended.
29 July 2020	DCMO input requested regarding maintaining CEV categories in care homes	DHSC policy team	I advised to continue with shielding programme – this group remained highly vulnerable to COVID-19, particularly the very elderly, within a setting where we were still looking to fully explore and mitigate risks of transmission **(Exhibit JH5/070 [INQ000152614])**.
31 October 2020	Rising case rates Autumn 2020	DHSC policy team	I advised: "*We should not return people to fully restrictive shielding ie never leaving the house, given the known negative mental health impact, particularly given the extended periods of relative isolation we have reached through the pandemic to date* *We should however move to the Tier 3+ advice already drafted - which is effectively the `modern' form of*

			shielding - and already signaled (sic) in existing advice and will in large part be being followed by the general public in any national intervention" **(Exhibit JH5/071 [INQ000153080])**.
20 November 2020	Shielding during the Christmas period and the maintenance of consistent messaging between the four nations	Cabinet Office	I advised: "*All broadly aligned on overall approach to shielding going forward i.e. not to utilise old restrictive approach and to generally add advice onto that for the local general population… This would be pragmatic, highlight risks of* *Christmas mixing but advise on the basis that if people choose to join families etc these are the safer behaviours* *they should practise*" **(Exhibit JH5/072 [INQ000153288])**.
19 December 2020	Shielding in Tier 4 areas	MHCLG, DHSC, HMT and the Cabinet Office	I advised: "*It feels appropriate not to have an automatic shielding* *approach but to have this available for extreme situations. If we need to roll it out further during the immediate future then it will be because the country is in an extreme situation with widespread transmission of the new variant."* **(Exhibit JH5/073 [INQ000153507])**.
7 January 2021	Significantly rising case numbers		The CEV group was again advised to shield from 5 January 2021 due to significantly rising case numbers **(Exhibit JH5/074 INQ000348067])**.

10 February 2021	Extension of shielding advice until 31 March 2021	DHSC	I recommended that shielding advice be extended to 31 March 2021 reflecting the reducing but continued high background community transmission rates of COVID-19; current understanding of vaccine effectiveness, particularly in some of the CEV groups; ongoing pressures on NHS capacity, both from COVID-19 and additionally from support required due to winter pressures **(Exhibit JH5/075 [INQ000153711])**.
23 July 2021	Shielding programme stood down		I provided advice jointly with Sir Jonathan (DCMO): *"As we move beyond Step 4 of the roadmap, the clinical steer from Dr Jenny Harries, Professor Jonathan Van Tam and others is that it is appropriate to return to the pre-pandemic approach of local advice and recommend that CEV individuals, particularly those who may have had a poorer response to the vaccine, receive COVID-19 risk advice from their NHS clinician. This approach will best allow for nuances in vaccine effectiveness, including the permanency of any immunosuppression, and individual risk to be properly addressed and will ensure individuals get the most appropriate, tailored advice. We are likely to be able to support this centrally by updating the clinical risk assessment tool for GPs and clinicians with the new version of QCOVID."*

			(Exhibit JH5/076 [INQ000061458]).

Occupational Risk

9.31. Ahead of the planned 'pause' in shielding guidance from 1 August 2020 and as highlighted previously at paragraph 9.5 above, I held a series of four nations, cross-government roundtables with expert clinical representation to agree clinical principles in respect of COVID-19 risk for clinically vulnerable groups in the workplace **(Exhibit JH5/055 [INQ000421846])**. The key conclusions from these round tables as they related to occupational risks were as follows:

i. Employers have a responsibility to protect all workers from harm by carrying out workplace risk management (of which risk assessment is a part) and providing a COVID-secure workplace. As a result, optimal protections should apply equally to all workers.

ii. When shielding was 'paused', CEV employees could return to workplaces if they were 'COVID-secure' but should be supported where possible to work from home to minimise the potential of exposure to Covid-19 in this vulnerable population.

iii. Whilst some employers had implemented a policy of individual risk assessments for staff, there were concerns that this may exacerbate inequalities if it resulted in mandatory changes to an individual's role. The emphasis should instead be on individual 'Covid conversations' which should be culturally competent, bi-directional and which promote reduction of risk in all environments. This recognised the complex interplay of social, behavioural and environmental factors which may impact on what appeared to be a 'high risk' setting.

iv. 'High risk' environments (e.g. clinical settings), as identified by a workplace risk assessment, should lead to management of the risk using the principles of hierarchy of control for all workers. Identification of a high risk setting either by category or principles for the purposes of additional protections for certain workers was not recommended. This is because it could lead to a false sense of security as workers and employers may

consider they can have lesser standards of COVID risk management in 'low risk' settings.

v. The importance of using terminology consistently in occupational settings was emphasised.

vi. Responsibility for translating the above principles into guidance and communicating them to employers, employees and occupational health / primary care sits across government departments and their specific industry interests. HSE's role was to provide advice and guidance on achieving compliance and appropriate workplace standards as its primary role is a workplace regulator/enforcement body.

Section 10: Long COVID

10.1. I do not recall providing significant advice on what became known as Long COVID over the summer of 2020. By that time, we had begun to develop some awareness of the possible mid-term consequences following COVID-19 infection. In response, the OCMO commissioned NIHR's Health Protection Research Units to perform some of the earliest research into the long-term outcomes from COVID-19 **(Exhibit JH5/077 [INQ000069876]).**

10.2. By the autumn of that year, as evidence of potential long-term effects accrued, NIHR and UKRI launched a Long COVID research call focused on understanding Long COVID in the community. This in turn supported a number of trials which undertook research into Long COVID. Much of the work on these within the OCMO was led by the CMO, who was concurrently head of NIHR. On 18 September 2020, I attended NERVTAG as a DHSC observer, at which point research to advance our knowledge of the condition was discussed. This meeting did not, however, in and of itself, particularly change our limited understanding at the time **(Exhibit JH5/078 [INQ000120446])**. It was instead aimed at putting in place the necessary programme to expand our understanding.

10.3. I did not have a formal role in research commissioning or NIHR and therefore my own involvement in the response to Long COVID was more to support early clinical discussions and topic exploration. I also contributed to a number of round tables, initially chaired by Lord Bethel, from which some evidence gaps were identified

which fed into the NIHR research call, in particular to ensure that primary care and community aspects of Long COVID were considered given that initial investigation tended naturally to focus on hospital admitted patients. Thereafter, much of the OCMO's work on Long COVID was led by Dr Aidan Fowler. This reflected the fact that the response to Long COVID was being advanced and owned by NHSE, who were first to encounter the clinical consequences, and so took the lead on management of Long COVID from a health service patient provision perspective.

Section 11: Lessons Learnt

11.1. The clinical principles underpinning the Shielding Programme were to identify a cohort of people thought likely to be at highest risk of adverse outcomes from a novel pathogen based on the earliest signals of viral and disease characteristics and provide public health advice, practical and financial support to enable them to follow shielding guidance if they wished to. There was a constant attempt to balance potential mental, physical and wider social risks of following stringent shielding advice with the benefit of staying out of contact with the virus as far as possible, particularly in an initial context of sparsely available evidence. This is likely to be a recurrent conundrum for any future pandemic or significant epidemic caused by a novel emerging pathogen.

11.2. There is therefore a need to consider whether this is something that as a society it is desirable to repeat in the event of a future pandemic and the potential overlaps with other population early warning systems. It is practically and clinically not straightforward to rapidly identify and protect a diverse and continuously changing clinical population from within a fragmented NHS data landscape, and this put an additional burden on front line staff who were asked to fill in the gaps that were known to exist in routine data sources and linkage. It was also challenging to identify highest risk individuals at the same time as robust evidence accrued about clinical risk in the face of a new pathogen, which led to the need for overlapping approaches to the development of the SPL using both a conditions-based and data driven (QCovid) approach starting from precautionary principles.

11.3. As I have noted in this statement, shielding as a concept meant different things to different people and, although there was significant attention paid to emphasising the purpose and voluntary nature of all advice individuals both within and outside Government frequently reiterated a different narrative.

11.4. The act of creating a shielding cohort of individuals who experience different exposure patterns to the virus than the general population means it is almost impossible to robustly evaluate the success of the programme due to the absence of a control group, whilst conversely creating one could unacceptably expose some individuals to higher levels of risk. It is also clear that there was a significant self-identifying population cohort who described themselves as clinically extremely vulnerable, outwith the groups formally identified. This means that where evidence has been reported, for example through the self-reported community infection survey questions, it is difficult to identify the true impact on those for whom the intervention was intended.

11.5. There are systems, processes and regulatory frameworks which govern the use of patient data which need to be in place in order to support the rapid operationalisation of any future clinical shielding policy in response to another pandemic. It would be advantageous to have systems already in place to support the rapid creation of a register of the population which is or could be vulnerable to any novel pathogen. It is also important to understand in advance where the clinical, policy and operational roles and responsibilities needed to operationalise a shielding programme in support of those on such a register would sit. Finally, the longer-term psychological impact on individuals of having been formally identified as clinically extremely vulnerable – even after the highest levels of risk have subsided following successful pharmaceutical mitigations such as vaccination or therapeutics - should also always be taken into account.

11.6. As a final observation, I would remark on the importance of clearly delineating the responsibilities of both individuals and organisations who are envisaged as having a role in any emergency response. Insofar as it can be anticipated, their roles, and the limits of such roles, should be considered and decided in advance of an emergency occurring. I have already described, at paragraph 6.19, some of the challenges which arose in respect of IPC guidance as a consequence of there

being a degree of overlap in the responsibility of different organisations. In respect of IPC guidance, UKHSA, as a new organisation, has taken proactive steps to address this and as far as is predictable has resolved this with partners through agreement and written delineation **(Exhibit JH5/079 [INQ000421847])**. Whilst it may be difficult to predict in advance the exact nature of problems which may arise, which will inevitably to some extent be context and circumstance specific, insofar as they can be anticipated and clarity provided, it is clearly beneficial to do so.

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: 27 June 2024

Annex 1

UK Clinical Panel for Shielded Patients – Minutes

Meeting Date	Exhibit Reference and INQ Number
19-Feb-21	JH5/080 [INQ000421843]
5-Jan-21	JH5/081 [INQ000421842]
12-Feb-21	JH5/082 [INQ000421841]
29-Jan-21	JH5/083 [INQ000421840]
22-Jan-21	JH5/084 [INQ000421839]
27-Nov-20	JH5/085 [INQ000421838]
20-Nov-20	JH5/086 [INQ000421837]
13-Nov-20	JH5/087 [INQ000483300]
23-Oct-20	JH5/088 [INQ000421836]
16-Oct-20	JH5/089 [INQ000483299]
9-Oct-20	JH5/090 [INQ000421835]
2-Oct-20	JH5/091 [INQ000421834]
5-Aug-20	JH5/092 [INQ000421833]
22-Jul-20	JH5/093 [INQ000421832]
15-Jul-20	JH5/094 [INQ000421831]
8-Jul-20	JH5/095 [INQ000421830]
1-Jul-20	JH5/096 [INQ000421829]
17-Jun-20	JH5/097 [INQ000421828]
10-Jun-20	JH5/098 [INQ000421827]
3-Jun-20	JH5/099 [INQ000421826]

27-May-20	JH5/100 [INQ000421825]
20-May-20	JH5/101 [INQ000421824]
13-May-20	JH5/102 [INQ000421823]
6-May-20	JH5/103 [INQ000421821]
28-Apr-20	JH5/104 [INQ000421822]
22-Apr-20	JH5/105 [INQ000421820]