Witness Name: Dominic Cook
Statement No.: 1
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UK COVID-19 INQUIRY

WITNESS STATEMENT OF DOMINIC COOK ON BEHALF OF DELOITTE LLP

I, Dominic Cook, will say as follows: -

1. I am a Partner in the Major Programmes team at Deloitte LLP (**Deloitte**). I have been asked by Deloitte to provide a witness statement in response to a request made by the Covid-19 Inquiry (**Inquiry**) under Rule 9 of The Inquiry Rules 2006 in relation to Module 5. I am pleased to assist the Inquiry with its important work.

2. Prior to joining Deloitte in November 2017, I was a qualified lawyer at international law firm Bird & Bird LLP for 26 years, 20 years of which I was a Partner. During that time, I held various management roles, including Head of Commercial, Executive Director on the Global Board and Management Committee member. Since joining Deloitte, I have acted as a lead in the governance and review of a range of significant public sector engagements. Such engagements have spanned across health, IT, defence, and justice. I am also experienced in acting for major private sector suppliers into the public sector. In addition, I am a major projects lawyer and presented to the first 33 cohorts of the Cabinet Office's Major Projects Leadership Academy as an Associate Fellow at Saïd Business School, .University of Oxford on core aspects of complex, multi-disciplinary major projects. The academy builds the skills of senior project leaders across government, making it easier to carry out complex projects effectively. In the future, no one will be able to lead a major Government project without completing the academy programme.

3. During the UK's response to the Covid-19 pandemic (**Covid-19 response**), I was the Deloitte Risk Partner across a number of Deloitte Covid-19

engagements with a particular focus on Project Cube, as well as a familiarity with the following projects which I consider to be relevant to Module 5:

(a) supporting the Government to set up a new supply chain for Personal Protective Equipment (**PPE**) (known within Deloitte as **Project Triangle**);

(b) supporting the National Supply Disruption Response (**NSDR**) team (part of the Department of Health and Social Care (**DHSC**)) on instruction from NHS England[1] to manage continuous supplies of PPE to the NHS and care providers by setting up a Commercial Procurement Cell (**CPC**) and a 24/7 case management emergency contact centre (known within Deloitte as **Project Arrow**);

(c) assisting the devolved nations by helping to co-ordinate the end-to end supply chain visibility of PPE information (known within Deloitte as **Project Ivy** for Wales and **Project Spider** for Scotland);

(d) providing services to NHSE to help to identify potential shortages of Intensive Care Unit (**ICU**) clinical consumables and to implement mitigating contingency measures (known within Deloitte as **Project Octagon**);

(e) supporting DHSC to source critical care consumables for ICUs and associated equipment to enable the scale up of acute capacity to support patients with Covid-19 (known within Deloitte as **Project Halo**); and

(f) assisting DHSC to set up the National Testing Programme and, for the purpose of this statement, Deloitte's role in the sourcing and distribution of polymerase chain reaction (**PCR**) and lateral flow device (**LFD**) tests (known internally within Deloitte as part of **Project Cube**).

4. These engagements are explained in detail below. For ease of reference, I have included:

[1]NHS England and NHS Improvement are defined within this document together as **NHSE** (see paragraph 15(b) below)

(a) Schedule 1 – a summary table which includes the relevant client entity for each engagement, the date the engagement started, details of our client contacts and the lead engagement partners from Deloitte (known internally as **LEP**s) as well as other key Deloitte individuals who are also named below together with their expertise;

(b) Schedule 2 - a glossary of key individuals, and their roles / bios; and

(c) Schedule 3 - a glossary of acronyms used within this statement.

5. My role in respect of these engagements was a full-time, pan-engagement role that required me to review and support the Covid-19 workstreams that were being underpinned or supported by Deloitte resources. Given the role I performed, I am well placed, with the requisite knowledge to make this statement on behalf of Deloitte in response to the Rule 9 request pertaining to Module 5 related matters. A separate Module 7 witness statement by me will be submitted to the Inquiry on behalf of Deloitte with a particular focus on our role in assisting the Government with the design, set up and rollout of the National Testing Programme.

6. This witness statement has been prepared by me, in conjunction with other individuals from Deloitte's Quality and Risk Team, following discussions in person and via Microsoft Teams and e-mail. In seeking to give a comprehensive response to the Inquiry, around 15 current and former partners and employees of Deloitte have been consulted, being those who played a significant or leadership role in the above projects. This statement is produced by me based upon (i) a collation of their input and experience, (ii) a review of documentation held by Deloitte and (iii) my first-hand experience as Deloitte Risk Partner across the various Deloitte supported Covid-19 engagements.

7. This Module 5 witness statement is arranged as follows:

A Executive Summary

8. The projects outlined above were set up by the various instructing Government departments and bodies to create, expand and/or accelerate the procurement and distribution of key healthcare equipment and supplies (specifically PPE, ICU equipment and associated clinical consumables, and PCR and LFD tests) as vital strands of the Covid-19 response.

9. This was in response to the disruption of global markets for these vital products at that time, which saw their demand significantly increasing, leading (in some cases) to price inflation and limited supplies. It was essential to the safety of

our NHS and social care workers, the treatment of patients suffering from Covid-19 in hospitals, and to the detection of the virus that these supplies be sourced and distributed in sufficient scale and at pace. Our instructing Government and NHS clients did not have the capacity or (in some cases) capability to handle this on their own.

10. Deloitte was one of many organisations, including the military, public and private sectors, that helped to support the Government to build and manage these supply chains. Deloitte provided expertise drawn from working across the healthcare and social care sectors in the design of supply chain strategies, data analytics, procurement, digital technology, and project management. Many of the Deloitte resources that were deployed had directly relevant experience of supply chain management and sourcing from their role supporting the DHSC during its EU Exit response planning.

11. From the date of instruction[2], Deloitte's support role for our various Government clients included, but was not limited to, Deloitte deploying:

    (a) project management support to help source more PPE from abroad ('**Buy**'), co-ordinate the early logistics of freight of PPE back to the UK ('**Deliver**'), assist with the procurement process in respect of the Government's "call to arms" to produce more PPE domestically ('**Make**') and co-ordinate the assessment of the technology in respect of the emergency re-use of single use and reusable PPE ('**Reuse**'). Most of Deloitte's time and resources were focused on the 'Make' aspect of the supply chain;

    (b) teams to design and operate a case management process to help the Government to facilitate PPE distribution requests from the NHS and social care sector at the direction of NHSE;

    (c) data analytics and data management services to enable NHSE to manage the supply and demand of critical care equipment and consumables at risk of shortage to enable products to be directed to the highest clinical need;

[2] Contract dates: Triangle: 14/03/2020-31/03/2021, Halo: 16/03/2020-31/03/2022, Arrow: 17/03/2020-31/03/2021, Cube: 19/03/2020-19/07/2022, Octagon: 20/04/2020-30/06/2020, Ivy: 15/04/2020-29/05/2020 and Spider: 3/04/2020-28/05/2020.

(d) teams to triage and filter the huge volumes of offers to DHSC in response to the requests for assistance for the domestic production of PPE and the acquisition of ventilators;

(e) programme leadership and project management support to help DHSC to architect and mobilise the National Testing Programme, including the formulation of the 168-stage process (the end-to-end process for PCR testing) mapped out in the early days of Deloitte's instruction;

(f) teams to support the development of the supply chain infrastructure in relation to PCR and LFD test sample collection kits; and

(g) programme leadership and project management support to help DHSC to source sample collection kits for PCR testing, co-ordinate the clinical validation of those kits (and later LFD kits), co-ordinate Government contracted logistics providers in the assembly and national distribution of PCR sample collection kits (and later LFD kits) on a daily basis, and work with those logistics providers to establish and make operational a UK wide logistics network for the collection of test samples to the laboratories.

12. It is worth noting that Deloitte took its instructions from its client (whether that be the Government or NHSE). Deloitte did not make any decisions as to the procurement (particularly quantities of or use of specific suppliers) or allocation or prioritisation of PPE, ICU consumables and their associated capital equipment, or PCR or LFD tests. These were policy or strategy decisions that were taken within Government or by NHSE, following which they relayed instructions to Deloitte and other parties working on the various projects. Deloitte contributed its skills and experience to help implement these instructions. Deloitte was the 'how', not the 'what' or the 'why'.

13. Deloitte is proud to have been one part of an immense national team effort, working alongside the Government, the military, the NHS, and the public and private sectors.

B Deloitte's Business, Expertise and Context

B.1 Deloitte's Business and Expertise

14. Deloitte is a limited liability partnership in the UK, comprising around 1,500 partners and 26,800 employees, offering a broad range of professional services. Deloitte provides those services to both the private sector and the public sector, including central, devolved, and local Government departments, and the NHS and other healthcare clients. Whilst it is true that Deloitte provides audit and accountancy services, a significant part of its business is its multi-disciplinary advisory and consultancy services.

15. Deloitte's diverse expertise in the following key areas were of direct relevance to the above projects:

(a) Supply Chain: we have teams with functional expertise in designing supply chain strategies right through to leading on supply chain transformation, all underpinned by appropriate technology, including procurement, logistics and distribution, manufacturing, and supply network planning across many market sectors including defence, healthcare (pharmaceuticals and medical technology), retail and consumer packaged goods.

(b) Healthcare: we have teams with expertise in working across (i) public sector healthcare in England, both nationally and locally including central government departments, arm's length bodies, regulators, local NHS Commissioners and Providers (including operational patient flow) and across the devolved nations; and (ii) the social care sector, with experience of local government social care commissioning and provider landscape. Those teams have experience of the supply chain landscape across the NHS and social care sector, nationally and locally, including the roles of NHS England and NHS Improvement (together **NHSE**) (legally constituted as the NHS Commissioning Board, but referred to throughout this statement as NHSE), DHSC, NHS Supply Chain[3], Collaborative Procurement Hubs, local Commissioners and Providers, and the product/service flows between suppliers and national/local organisations.

(c) Major Programmes: in which we bring together multidisciplinary teams

[3] In this statement NHS Supply Chain means NHS Supply Chain Co-ordination Limited, known as NHS Supply Chain (owned by NHS England). 'NHS supply chain' means the supply chain itself rather than the organisation.

of people to deliver complex projects. This encompasses delivering Programme Leadership, Capital Programmes, Digital Programme Delivery, Programme Management and Architecture and Strategy into projects, programmes, and transformation.

(d) Data Analytics: we have dedicated teams (including former NHS data professionals) with skills across data strategies, data engineering, data science and artificial intelligence. These teams have expertise in building complex models, handling complex data, and helping organisations with analytical decision-making using appropriate technology.

16. Deloitte is one of the few organisations in the UK capable of deploying teams with such a significant range of skills and expertise from across its public and private sector businesses at scale and at pace. Moreover, our pre-existing understanding of NHS Supply Chain, related data, and relationships with key stakeholders and how the supply chain operated across:

(a) the NHS landscape between suppliers, NHS, and social care organisations; and

(b) between national, regional, and local buyers and the logistics network, meant that we were able to mobilise, at pace (given the urgent circumstances), teams with relevant expertise and understanding of how the UK and devolved public sector healthcare systems operate.

B.2 Context

17. There are certain points of context that, I think, are important to outline before I move to the detail of how Deloitte supported the Government in the various projects described above. They are:

(a) Covid-19 was a new and unknown virus in early 2020. Those working on the projects did so in an environment with a high degree of uncertainty, amidst continually changing political, social, and clinical requirements.

(b) Like nearly everyone in the UK at that time, those working on the projects were concerned about the implications of interacting with others and in doing so, putting their own health and well-being at risk,

and our teams within Deloitte were no exception.

(c) There was a global shortage of PPE, ICU equipment and associated clinical consumables, and sample collection test kits. The requirements for such products increased exponentially and they became difficult to source.

(d) Like many other countries, the UK did not have sufficient stockpiles of PPE at the outset of the pandemic.

(e) There was an emergency need and extraordinary efforts were made by domestic manufacturers and suppliers to ramp up capacity and deliver new products.

(f) The National Testing Programme had to be built virtually from scratch, independent from the existing NHS infrastructure, which was not deemed suitable by the Government for national testing at scale due to being fragmented in nature and already under intense pressure in early 2020.

(g) Solutions were needed to deal with PCR testing at scale. In total, although not an exhaustive list, the National Testing Programme overall:

(i) stood up over 1,000 test sites (89 drive-through, 510 walk-through and 500 mobile test units);

(ii) supported the set-up of lighthouse laboratories and collaborated with a number of partner and surge laboratories;

(iii) designed and delivered the Rosalind Franklin laboratory in Leamington Spa (a lab with a daily testing capacity of 300,000 and which processed 8.5 million tests during the pandemic); and

(iv) designed and ran a national digital portal to deliver tests to 100,000 homes and 30,000 testing locations on a daily basis.

(h) The National Testing Programme project managed the roll out of new testing technologies, including LFDs. In the eight months leading up to 27 April 2021, a total of over 614 million LFDs had been dispatched in

the UK.

18. There is a degree of overlap between Projects Triangle, Octagon and Halo. Project Halo started first chronologically when Chris Stirling of DHSC (a former Deloitte partner, who left in 2013) contacted Deloitte Partner Fiona Downing (whose experience I explain at paragraph 24 below) on around 8 March 2020 seeking support with the sourcing of critical care consumables for ICUs and associated equipment. Project Triangle started on around 14 March 2020 as a new engagement dealing with PPE. Project Octagon, which concerned help to NHSE to identify potential shortages of ICU clinical consumables and to implement mitigating contingency measures, began as a standalone project on around 20 April 2020 but, with the agreement of our clients, merged with Project Halo in June 2020.

19. I have explained below in relation to each project its connection with the devolved administrations. With health being a devolved matter, the projects were generally focused on England (except as I have specifically identified below as regards Project Spider and Ivy). There was ongoing collaboration, support, and shared learnings between all devolved administrations. Such discussions were undertaken at a Government level though, and not by Deloitte.

20. I will take each of the projects in turn (by subject matter rather than chronologically):

C Project Triangle

21. Deloitte was engaged from around 14 March 2020 to support the delivery of DHSC's PPE sourcing programme, including the identification and procurement of multiple categories of PPE. The overarching objective of Project Triangle was to help DHSC to set up a new PPE supply chain (separate to the pre-existing NHS supply chain, for the reasons set out below), to meet the challenges of increased competition in the international market and logistical challenges caused by the pandemic in terms of restrictions on movement and at borders. There was an emphasis on producing more PPE domestically, with the later additional scope of investigating the re-use of PPE and procuring reusable PPE. Deloitte's role supporting DHSC to procure more PPE from abroad was much more limited.

C.1 Summary of Project Triangle

22. DHSC, NHSE and Cabinet Office came together to lead Project Triangle from a client perspective [DC/01 - INQ*561546/ DC/02 - INQ*561542/ DC/03 - INQ*561547]. The contracting entity was Cabinet Office, but the contract was later novated to DHSC.

23. In April 2020, The Right Honourable Lord Deighton KBE (**Lord Deighton**) was appointed by DHSC to lead the UK's effort to boost PPE production and scale up the engineering efforts of small companies who were able to contribute supplies. Over the course of our engagement, Deloitte worked under the direction and oversight of senior civil servants at DHSC (and the Cabinet Office and NHSE), with the structure, governance and leadership of the project changing over time, especially with the arrival of Lord Deighton.

24. Deloitte's LEPs for Project Triangle were Colin Terry and Fiona Downing (from July 2020). Colin Terry is a Partner in Deloitte's Life Sciences practice with over 20 years' experience in life sciences (pharmaceuticals and medical devices) including supply chain, Research and Development (**R&D**) and general management. His client advisory work ranges across R&D strategy and operations to cost reduction, including procurement. Fiona Downing is a Partner who leads Deloitte's Public Sector Healthcare Supply Chain practice. She has over 20 years' experience driving procurement and supply chain transformation across private and public sector, including deploying end to end digital platforms, process design and improvement. She has extensive experience leading public sector transformation engagements across Health and Local Regional Government. Fiona was the Lead Partner for NHSE's Procurement Target Operating Model and DHSC's EU Exit response planning.

25. There are certain points of context for Project Triangle which are important to explain:

    (a) Prior to the pandemic, in common with other major economies around the globe, the majority of the UK's PPE requirements (including raw materials) were sourced globally, which meant that the UK had a limited domestic manufacturing capability in this area and would be competing with many other countries for PPE in a pandemic. New international agreements needed to be entered into between Government and global

suppliers in the early stages of the pandemic to ensure continuity of supply for surge demand in both PPE and its raw materials. This was against a backdrop of unprecedented international demand for those same products. This challenge required the design and implementation of a new PPE sourcing and distribution network, separate to the existing NHS supply chain.

(b) There was also a clear and pressing need to manufacture PPE domestically and to expand capacity by bringing on board new suppliers. Any equipment produced needed to be of suitable quality and meet relevant UK regulatory requirements for PPE. Potential new suppliers therefore had to be comprehensively and rigorously reviewed (part of the eight-step process I describe further below). This was not the role of Deloitte but is important background.

(c) Commercial and contractual decisions were made by DHSC, Cabinet Office, HM Treasury and NHSE. Deloitte played no part in pricing, specification, or quantity related decisions or in the allocation of PPE.

26. Project Triangle evolved over time in accordance with the Government's priorities but broadly involved the following workstreams (in which the role of Deloitte was more limited in some than others):

(a) limited support on 'Buy', which focused on sourcing PPE products from existing and new suppliers;

(b) managing 'Deliver' through logistics, which co-ordinated the delivery of new items of PPE from the 'factory gates' internationally to the UK;

(c) supporting on 'Make', which dealt with sourcing of PPE from domestic manufacturers new to the market; and

(d) assessing techniques to allow for 'Re-use', which considered the potential for decontamination techniques for emergency re-use of single-use and re-usable PPE items.

27. "Buy", "Deliver", "Make" and "Re-Use" are termed as '**channels**' throughout the Project Triangle section of my statement. The channels were set up by a combined team from DHSC and the Cabinet Office. I take each channel in turn below.

28. NHS Supply Chain covered Wales, England, and to some extent, Scotland, however, did not cover Northern Ireland. The primary focus for Project Triangle was on England. Nevertheless, information about shortages was shared with Scotland and Wales. Representatives from these nations often enquired about accessing the stockpile but had their own contingency measures in place. The engagement with the devolved administrations was therefore more about information and intelligence sharing.

C.2 "Buy"

29. The 'Buy' channel focused on sourcing PPE products from existing and new suppliers. Deloitte's involvement on the 'Buy' side was limited; it can best be described as the provision of purchasing information provided to us by the Government teams in the UK (for example HM Treasury, DHSC Finance and Regulatory teams) to the staff at the British Embassy in Beijing. This included information around volumes and specifications of PPE needed and timelines from the Government's official working supply and demand plan. Initially this was done by the circulation of spreadsheets before the electronic workflow Atamis (which I describe below) was put in place. Quantity / volume information was provided by Cabinet Office supported, as I understand, by McKinsey & Company. Deloitte's role reduced further still when Lord Deighton came on board in April 2020[4]. Only one Deloitte person remained involved after this date.

C.3 "Deliver"

30. The 'Deliver' channel co-ordinated the delivery of new items of PPE from the 'factory gates' internationally to the UK. Deloitte provided a small team with expertise in global freight, logistics, third-party logistics and analytics to support this channel. Deloitte helped to develop plans for the shipment and delivery of acquired PPE from global manufacturers to where it was required in the UK, which included supporting DHSC (in a data analytical function) so that DHSC could manage and organise warehousing, transportation, and distribution. Deloitte's role did not involve domestic sourcing or distribution of PPE but this was part of the broader Deliver channel, managed by DHSC with the support of other contractors.

[4] Deloitte was asked to report into Lord Deighton's team at DHSC, including Gary Horsfield and Peter Stanton-Ife, whose roles are described in Schedule 2.

31. Deloitte reported to Nick Parkes, Freight and Logistics Lead at DHSC. Nick Parkes approved any final decision-making (including freight costs). Deloitte supported this decision-making through data provision, for example by reporting:

(a) capacity requirements for air freight and the number of aircraft required (DHSC reviewed that data and made bookings of required capacity); and

(b) volumes of PPE coming into the country based on information from manifests.

32. Deloitte set up and managed a freight desk to track shipments and report PPE logistics to Nick Parkes. Given the challenges of tracking inbound PPE, Deloitte designed and implemented an Excel-based model, which combined multiple sources of data from manifests from the third-party logistics providers and known transport channel capacities. In this instance, due to the speed of set up and variety/types of datasets, Excel was the most suitable tool to use. This created a single tracking and reporting mechanism detailing what was arriving in the UK.

33. Initially emergency air freight was prioritised, with airline companies converting their passenger planes into cargo freight aircraft to transport PPE from the supply countries to the UK. Part of Deloitte's role was to maintain the manifests (documents listing the inventory of the freight), to support DHSC's strategy of ensuring the right category of products was being flown in to meet UK demand.

34. During May and June 2020, Deloitte supported the creation of escalation processes for NHS Trusts and devolved administrations, which were outside the remit of DHSC/NHS Supply Chain, to allow them to request freight movement through the established DHSC PPE supply chain. Deloitte also developed a capacity model to understand the required air freight requirements, used to report inbound stock into the UK [DC/04 - INQ*561558]. Once time-critical urgency had started to pass, given that PPE stockpiles had grown, Deloitte also evolved the "multi-modal model" for transitioning freight away from air to a more conventional logistics approach (rail and sea) where there was not more urgent need, which I understand led to cost savings.

C.4 "Make"

35. The 'Make' channel was the main part of Deloitte's support in the sourcing of PPE and was focused on enabling the domestic production of PPE products from manufacturers new to the market (meaning those outside the existing NHS supply chain or companies which had not manufactured PPE before). Deloitte provided DHSC with operational support to mobilise new manufacturers in the UK.

36. Following the Government's 'call to arms' to the domestic manufacturing industry in April 2020 to join forces to produce PPE, tens of thousands of offers of help were received via email or online form, coming from many different sources ranging from knitting circles, individuals offering to make PPE on their 3D printers, through to larger manufacturers who were able to pivot their production to PPE manufacturing.

37. The response was incredible, and a filtering process was needed. Deloitte was asked to help triage offers of PPE, following an eight-stage process map for new suppliers designed by DHSC **[DC/05 - INQ*561569]** Offers were directed to the correct teams at DHSC for review, using criteria set by our Government clients aligned with the quantity / volume demand planning (supported by McKinsey & Company as referenced above) based on specifications such as the scale and speed in which products could be manufactured, and a comparison of the products offered with standard technical specifications and regulations for similar products set by and provided to Deloitte by DHSC and NHSE **[DC/06 - INQ*561553]** Initially 'Make' opportunities were tracked via Excel spreadsheet before being migrated onto Atamis, the system I describe below **[DC/07 - INQ*561555].**

38. Deloitte assisted with initial triaging of offers to rule out non-credible manufacturers based on the criteria set out above. Deloitte then helped to co-ordinate any viable offers (i.e. those which met DHSC's criteria) through DHSC's defined process for prototyping, regulatory testing, and a technical product review phase for new or prototype products. Deloitte also helped co-ordinate between testing houses, compliance, and regulatory bodies such as the Medicines and Healthcare Products Regulatory Agency and the Health and Safety Executive (otherwise known as MHRA and HSE). In addition, Deloitte supported DHSC with its supplier on-boarding activities, such as data gathering for DHSC's financial due diligence and anti-fraud processes and for its negotiation and agreement of commercial terms and prices, before DHSC

made the final decision on procurement. If DHSC decided to proceed, DHSC would engage its legal team to draw up the relevant contractual documentation for execution by DHSC and the supplier. Deloitte was not involved in this process.

39. The Cabinet Office directed, by email dated 27 March 2020, that any offers coming in from those including Members of Parliament, Peers, Ministers and other senior officials must be directed to Hannah Bolton at the Cabinet Office. I believe that this instruction was subsequently labelled the 'VIP lane'. Those offers still had to go through the same eight stage decision-making process as all other offers (as described above). In that way, the 'VIP lane' offers received no different treatment from Deloitte versus other types of offers. My understanding is that it was purely a process to indicate additional reporting requirements back to the referrer or communications with those making the offer [DC/08 - INQ*561533]

40. Additionally, Deloitte helped to collate information and updates for reporting to various stakeholders (including from DHSC, Cabinet Office, Ministry of Defence and NHSE) on daily calls [DC/09 - INQ*561534/DC/10 - INQ*561535]. Deloitte played the same information reporting role for Projects Halo and Arrow, which I describe below.

C.5 "Re-use"

41. In the Re-use channel, Deloitte's work included the following:

(a) Investigating the potential for decontamination techniques for emergency re-use of single-use and re-usable PPE items by collating information from NHS Trusts and reporting to a cross-organisational Technical Advisory Working Group across the MHRA, the Office for Product Safety and Standards and HSE; and

(b) Facilitating (in an organisational role) the testing of emergency decontamination techniques for the safe re-use of single-use and reusable PPE, as well as helping to organise pilots within certain volunteer NHS Trusts from September to November 2020 (for the avoidance of doubt, Deloitte did not actually design or carry out the testing).

42. By virtue of the above, Deloitte helped DHSC to build a business case for the purchase of reusable PPE. Deloitte also assisted DHSC in providing reports to the Government's Ethics Committee on the activities of the 'Re-use' channel, providing information to enable DHSC to draft policy papers and internal/external communications on the ongoing work. Any decisions about re-use and its effectiveness were taken by the Government.

C.6 Project Triangle – systems created / contributed to

43. At the outset of our engagement, the Cabinet Office was using a basic tool (**Mendix**) to track offers of support to the pandemic response, including offers of PPE, which were submitted via an online form. This tool was of limited utility due to the scale of the response received. A new platform called 'Atamis' (built on Salesforce) was already being configured by DHSC to cover procurement and contract management. Working with DHSC Systems Lead, Steve Balding, Deloitte assisted with the extension of Atamis to include management of PPE 'Buy' and 'Make' activity. [5] This meant the Mendix tool could be decommissioned and there was a move away from the manual process of circulating information via email and spreadsheets, which was replaced with a structured electronic workflow for the full end-to-end process [DC/11 - INQ*561559]

D Project Arrow

44. Deloitte was engaged by NHSE on 17 March 2020 to set up a CPC to support the continuity of NHS supplies during the Covid-19 response as part of a broader contingency solution incorporating the National Supply Disruption Response (**NSDR**) team [DC/12 - INQ*561545] [DC/13 - INQ*561540] [DC/14 - INQ*561543] [DC/15 - INQ*561539] [DC/16 - INQ*561538] [DC/17 - INQ*561537] The purpose of the CPC was to create a channel for NHS and social care organisations to report PPE shortages and to facilitate PPE distribution to those organisations in an emergency. This was primarily achieved via a 24/7 helpline and case management centre, enabling demand, shortages, and accessibility issues around PPE to be reported and sought to be resolved.

45. Deloitte's LEP for Project Arrow was Catherine Skilton. Catherine was a Partner in Deloitte's Health Systems sector with more than 20 years' experience of

[5] All UK 'Make' activities were migrated onto Atamis in May 2020.

working with boards to deliver sustainable, digitally enabled change across care model transformation, mergers & acquisitions, and financial and operational improvement within the NHS. Catherine no longer works at Deloitte.

46. By way of background, in 2019, as part of EU Exit planning, an NSDR helpline had been created by DHSC to support the NHS with any disruption in the supply of medical devices, clinical consumables and other non-clinical goods and services after the UK's exit. Deloitte (led by Fiona Downing) had been part of the team advising DHSC on the design and testing of the NSDR helpline for EU Exit. This helpline was repurposed by NHSE in March 2020 for Covid-19 shortages, which at the time were predominately PPE-related. Deloitte was engaged to design and operate the case management process to facilitate PPE distribution requests.

47. Throughout the engagement, Deloitte:

(a) kept the design of the case management process under constant review, updating and amending the process to create enhancements;

(b) developed a case management solution; and

(c) trained case managers, all to continuously drive efficiency and respond to changes in both national guidance and supply and demand. We were not involved in the actual procurement of PPE (which was led by DHSC) nor in any allocation decisions (which were made by the NHS). Project Arrow had a focus on England only as the devolved nations managed their own PPE distribution needs.

D.1 Project Arrow: Summary

48. On 17 March 2020, Lois Shield of NHSE, who had been the Non-Medicines Contingency Planner for EU Exit, sought Deloitte's support (through Fiona Downing) to set up a CPC. We understand that she had been asked to set up the CPC by Dr Emily Lawson DBE, Chief Commercial Officer within NHSE. As Deloitte had the relevant experience from the EU Exit planning project, the engagement team were well placed to assist with its rapid re-purpose to deal with the requirements of Project Arrow.

49. As referenced above, Deloitte's role was to support NHSE to re-purpose the NSDR and help to run a rapidly changing and expanding CPC on a 24/7 basis.

Within 12 hours we deployed a team of people who were able to help with the expansion of the CPC.

50. Once set up, the CPC operated as follows. A team from NSDR answered the helpline calls received from the NHS and social care providers in need of PPE. Initially details of these calls were captured in Excel spreadsheets and passed to a team of case handlers, jointly managed by Deloitte and NHSE (for ease of reference I shall call them "**the Case Management team**") to action. By 25 March 2020, however, the Excel spreadsheets were replaced by a digital case management system, which was designed, built, and implemented by Deloitte for the CPC to enable effective management of the PPE requests, i.e. structured workforce and notes captured on the outcome of each request. It also provided management information on call volumes and PPE requests to support planning. This '**Case Management Solution**' is described in more detail below and in the *Systems created / contributed to* section.

51. All calls logged on the Case Management Solution were routed to the Case Management team. The Case Management team was comprised of Deloitte and NHSE personnel and its first role was to return calls from the NHS or social care providers to better understand their immediate urgent PPE needs. The Case Management team would then try to match those needs with the supply available on inventory management systems, which were being monitored and maintained by DHSC. If the required PPE was available and authorised by DHSC, the Case Management team arranged delivery to the requestor using the channels established by the CPC. If it was not then the Case Management team advised the requestor that the CPC was not able to help immediately and that they should seek help from other care providers in the short term. This was termed 'mutual aid'.

52. As part of Deloitte's role, we also developed training packages and operating handbooks for the Case Management team [DC/18 - INQ*561566] and continuously sought to improve and adapt the processes in order to enhance efficiency but also to respond to changes in the Government's national guidance as well as in supply and demand.

53. After around 12 months, Deloitte designed the exit arrangements to enable all of the Deloitte support, including the Case Management Solution, to be transferred to NHSE. Our engagement came to an end on 31 March 2021, at

which time the NSDR was able to manage the significantly decreased number of daily calls in its business-as-usual environment.

D.2 Project Arrow: systems created / contributed to

54. As I have explained above, one of Deloitte's key contributions on Project Arrow was designing, implementing, and operating the Case Management Solution.

55. The Excel spreadsheets which the NHSE team were using prior to the implementation of the Case Management Solution were not scalable and would have rapidly been overwhelmed by the volume of requests. The CPC and Deloitte recognised that an automated solution was required, which could capture the demand being received on the NSDR helpline.

56. The Case Management Solution was an essential element of the CPC. It provided an audit trail for each case, capturing data on a centralised case tracking platform. This allowed the Case Management team to understand and track PPE demand trends and key data insights and share these with NHSE, thereby enabling NHSE/DHSC to make better informed decisions about how it would, for example, allocate the limited available PPE resources.

57. Over the duration of our engagement on Project Arrow (that is between March 2020 to March 2021), cases were raised by over 17,000 NHS and care providers. The process that Deloitte helped to develop meant that the CPC was able to achieve a rapid resolution time (i.e. reduce the providers' PPE request fulfilment time) from five days in May 2020 to one day by the end of July 2020, which was maintained going forward [DC/19 - INQ*561564]

E Projects Ivy and Spider

58. Deloitte was involved in the following smaller projects relating to PPE in respect of the devolved administrations.

E.1 Project Ivy

59. NHS Wales Shared Services Partnership (**NWSSP**) created a centralised response team to oversee national PPE requirements and co-ordinate communication in respect of those [DC/20 - INQ*561567] [DC/21 - INQ*561568] Deloitte provided project management and data analytics expertise to help NWSSP understand PPE supply and demand across Wales.

60. The Deloitte LEP for Project Ivy was Gus Miah. Gus has over 25 years' of experience working with leading healthcare and communication organisations throughout the UK advising them on operational, financial, and digital strategies. He has supported an ecosystem of healthcare technology startups in AI, cyber, analytics and voice recognition. Gus no longer works at Deloitte.

61. Deloitte's role was to establish a project management office under NWSSP's guidance to help:

(a) co-ordinate PPE information between NWSSP, the seven Welsh Health Boards, the three NHS Trusts, and the Welsh Cabinet; and

(b) enhance and develop the working model already put in place by NWSSP to track indicative usage rates and changes in PPE stock and requests from across the Welsh Health Boards and NHS Trusts and timescales into a visual daily snapshot. Effectively our role was taking and streamlining their data inputs into visual dashboards to support NWSSP's PPE considerations. It was not part of our remit to managing responses from domestic manufacturers to close the shortfall in supply of PPE.

E.2 Project Spider

62. In Scotland, Deloitte worked under the guidance of NHS National Services Scotland (**NSS**) as it established a project management office to co-ordinate PPE information going out to the Scottish health boards. Deloitte provided expertise to enhance their supply chain modelling, including providing end-to-end process mapping [DC/22 - INQ*561551] [DC/23 - INQ*561536]

63. Angela Mitchell was Deloitte's LEP for Project Spider. She is a Partner who leads Deloitte's government and public sector business in Scotland and has overall responsibility for our portfolio of work across government, justice, local government, health, and education. She has extensive experience in leading complex, business critical, technology-focused projects for clients such as the Scottish Government, NHS Scotland, and Social Security Scotland.

64. At this time, the existing PPE distribution network to social care providers in Scotland was under a high level of strain, which created a challenge in terms of procuring timely and sufficient quantities of stock. Given these challenges,

NSS engaged Deloitte to help understand pinch points within the distribution process and review the demand models being used to support decision-making in the distribution of PPE over a period of 6-8 weeks.

65. The output of Project Spider was a PowerPoint report [DC/24 - INQ*561557] in which Deloitte made recommendations designed to address key challenges raised by NSS. These recommendations included, by way of example, recommendations relating to usage and bringing together a cross-functional team, including clinicians, to define acceptable substitute items for those running low.

66. Deloitte also produced a training deck for social care providers to explain the new PPE distribution process [DC/25 - INQ*561562] and to help with using the technology in place to order supplies (although Deloitte did not have any role in developing or supplying that technology).

F Project Octagon

67. Deloitte was engaged by NHSE from around 20 April 2020 to design a process to enable NHSE to manage supply and demand of ICU consumables at risk of shortage and to enable products to be directed to the highest clinical need. This engagement included designing a process which NHS Supply Chain (the organisation set up to manage procurement for NHS Trusts - the main channel to order and distribute products) could implement, underpinned by data analytics and data management services. A key enabler of this work was the analysis of supply chain data relating to ICU consumables and NHS Trust ordering patterns.

68. With health being a devolved matter, Project Octagon was focused on England. As this engagement transitioned into Project Halo (described below) there was ongoing collaboration, support, and shared learnings between all devolved administrations. Such discussions were undertaken at a government level though, and not by Deloitte.

F.1 Summary of Project Octagon

69. Preeya Bailie of NHSE called Fiona Downing in around mid-April 2020 to ask Deloitte to assist with this engagement [DC/26 - INQ*561541]. Fiona Downing notified the senior leadership team at Deloitte, and they identified George Johnston as the Partner with the relevant data expertise to lead this

engagement. George is a leader in Deloitte's AI and Data practice and specialises in delivering scalable, transformative solutions for clients in the technology, media, and telecoms sectors.

70. As referenced above, the background to this engagement was a request from NHSE to support the design and implementation of demand management processes for ICU consumables. Data analysis was needed to understand historical and current NHS Trust order patterns to enable any unexpected peaks in local demand to be identified and to seek to identify (and minimise in advance) the potential risks of national stock shortages for ICU consumables due to unnecessary localised stockpiling.

71. The clinical consumables concerned were initially specific to treating patients in ICU. This was later expanded to patients in an acute setting with Covid-19 [DC/27 - INQ*561550]. By way of example, oxygen masks, oxygen tubing and syringes were some of these products.

F.2 Project Octagon - systems created / contributed to

72. There is substantial overlap between Projects Octagon and Halo, and the projects eventually merged in June 2020 (with the agreement of our clients). The systems and processes I describe below in respect of Octagon, were also used in Halo.

73. Deloitte was tasked with designing an ICU Consumables Demand Management Process (**Demand Management Process**), which included building a suite of reports and dashboards utilising the following data sources:

(a) supply data (such as order levels, stock levels and re-supply information), the source of which was NHS Supply Chain; and

(b) demand data (such as ICU capacity and Covid-19 forecasts) provided by NHSE.

74. A model was developed by Deloitte as a key enabler to the Demand Management Process and agreed with NHSE. Both (a) and (b) above were the key data inputs into the model developed which enabled NHSE to identify products or product categories which were at potential risk of shortage and where NHS Trust order volumes seemed higher than would be expected against the number of Covid-19 patients (as reported by the NHS Trusts).

75. The Demand Management Process showed the volumes of stock available within the NHS supply chain warehouses and estimated quantities to be delivered against weekly forecast demand (based on information provided by NHS Supply Chain) to enable an estimation of when stocks could fall low. A handbook produced by Deloitte alongside NHSE explains how the Demand Management Process operated [DC/28 - INQ*561565]

76. The Demand Management Process categorised products into the following four demand management categories: [DC/29 - INQ*561560] :

(a) Sustain - where there was plenty of stock and no particular concerns regarding shortages;

(b) Monitor - where there was adequate stock to meet demand but conversations were needed with NHS Trusts if there were large or excessive orders to understand the driver;

(c) Protect - where current stock levels could not meet demand; and

(d) Control – where stock levels were critically low.

77. There was a Shortage Management Oversight Group (**SMOG**), led and chaired by DHSC, which decided on the categorisation of products to these four demand management categories. Deloitte collated the information required for this group and picked up actions to further investigate and support the mitigation of any supply shortages.

78. When products were categorised by SMOG as either 'Monitor' or 'Protect', Deloitte supported NHSE in the tracking and reporting of orders above certain thresholds (set by NHSE) and implemented a demand management process whereby further information was requested from the relevant NHS Trusts regarding the volumes ordered, to seek to understand the clinical need for the quantities they had requested.

79. When products were categorised by SMOG into 'Control', the products were no longer available via business-as-usual ordering routes and were allocated according to clinical need. Deloitte provided additional support for 'Control' where product stock levels were critically low. In particular, we helped to create the NHS Trust inventory management data collection process. An information collection form (created by Deloitte in consultation with NHSE, DHSC, NHS

Supply Chain and NHS Trust representatives) was held on an NHSE platform, and pulled into NHS Foundry (hosted and run by Palantir), which NHS Trusts were asked to fill in weekly to specify what levels of stock they had against specific products. This information provided a national view (visible on NHS Foundry) of product levels and enabled 'mutual aid'[6] between NHS Trusts, meaning they could supply a neighbouring NHS Trust if they had excess supply. This was a key information source when allocating products in 'Control'. Only products in 'Control' were allocated in this way.

80. The stock information and NHS Trust product requests for 'Control' products were reviewed by a group made up of NHSE Regional Leads, NHS Supply Chain and NHSE National Lead Clinicians as part of the Emergency, Preparedness, Resilience and Response team (**Consumables Group**). This group made decisions about how and where to allocate available stock to the organisations requesting it, based on clinical need. Decisions required about allocation of low availability stock and requests for stock above the thresholds set were escalated daily to the Consumables Group. Deloitte did not make any allocation decisions, but rather played a co-ordination role and provided information as to stock volumes and availability.

81. The suite of reports and dashboards that Deloitte built to enable the Demand Management Process carried over into Project Halo (which I explain below).

G Project Halo

82. Deloitte's client for Project Halo was DHSC [DC/30 - INQ*561548 / DC/31 - INQ*561549/ DC/32 - INQ*561544/DC/33 - INQ*561563]. Project Halo started on or around 16 March 2020 following Chris Stirling of DHSC contacting Fiona Downing on around 8 March 2020 to seek support with the sourcing of critical care consumables for ICUs and associated equipment. Chris Stirling was our key point of contact for Project Halo. He was the DHSC Oxygen Programme Director. He reported into Steve Oldfield, Chief Commercial Officer for DHSC and Dr Emily Lawson, Chief Commercial Officer for NHSE. Deloitte's LEP for Project Halo was Fiona Downing.

[6] See paragraph 51 above

83. Similarly to Project Octagon, Project Halo was predominantly about understanding and monitoring order volumes from NHS Trusts for critical care consumables (and, to a lesser extent, equipment) needed for NHS ICU beds nationally[7]. The sourcing of these products was already happening on a national scale via the NHS Supply Chain and related routes. The purpose of Project Halo was to identify the list of products needed for ICU beds, anticipate the risk of potential product shortages arising before they materialised and take steps to mitigate these at a national level. Deloitte played a co-ordination, triaging, reporting and project management role in Project Halo.

84. As with Project Octagon, the response was focused on England, but this was coupled with ongoing collaboration, support, and shared learnings by DHSC and NHSE between all devolved administrations throughout the engagement at a client level.

G.1 Summary of Project Halo

85. Patients who became critically unwell with Covid-19 needed to be cared for in an ICU setting. This meant there was much higher demand than usual for critical care consumables relating to respiratory support. The products concerned included equipment and associated consumables required to support patients in ICU and step-down settings.

86. Deloitte did not make any decisions in relation to the types of critical care consumables needed, the estimated quantities or the costs and nor did Deloitte place any orders for those products; that was the remit of DHSC and NHSE. Examples of roles Deloitte was asked to perform by DHSC included:

    (a) Working with clinicians to understand product needs and co-ordinating this information with the NHS Supply Chain buying teams to help source equipment and products;

    (b) Involvement in dialogue with clinicians to check that products met the required standards. This was a co-ordination role; we were not involved

[7]As time went by the pathway changed and more patients were treated outside ICU but the project was still called ICU consumables.

in the process of clinical validation or in making the decision as to whether a particular product was compliant; and

(c) Reviewing orders for sign off and obtaining DHSC approval before orders were placed. Orders were either approved by Chris Stirling, Steve Oldfield or David Williams (Director General of Finance for DHSC) depending on value.

G.2 Ventilators

87. The Prime Minister announced the "ventilator challenge" on 16 March 2020, which had two strands:

(a) 'Ventilator make' - where companies were asked to help design and manufacture ventilators needed for Covid-19 patients; and

(b) 'Ventilator buy' - to source existing ventilators for ICUs, often imported from China.

88. Deloitte was not engaged by DHSC in the 'Ventilator make' strand. On the 'Ventilator buy' strand, before we came on board DHSC had already developed a process to triage and filter the huge volume of emails sent to DHSC in response to the challenge. We provided some additional capacity to triage these emails as part of the wider DHSC team. Later in the project there was a programme of work in which we assisted clinicians with the project management of creating training videos for ICUs to cover the use, management, and maintenance of ventilators, which was needed because some of the ventilators were not widely used in the UK previously.

G.3 ICU Consumables

89. In terms of ICU consumables, one of the first tasks for Deloitte was to work with NHSE's National Anaesthetist, NHS Critical Care clinical leads and NHS Supply Chain (in particular, the specialist clinical buying functions within this, known as Category Towers) to understand and define the "shopping list" of critical care products needed to run ICU beds and the estimated quantities required.

90. The NHS Critical Care clinical leads wrote this “shopping list” and estimated quantities required, which NHS Supply Chain then used as the basis to map

products to existing framework catalogues (catalogues covering products that NHS Supply Chain could supply to NHS Trusts), identify the manufacturer product codes, and estimate the quantities needed. Once manufacturer product codes and estimated quantities were known, costs were estimated by NHS Supply Chain and these were reviewed by Chris Stirling of DHSC to agree to source. NHS Supply Chain placed orders directly with suppliers and requested feedback on what could be supplied in what timeframe. Deloitte had a co-ordination and supporting role.

91. If a product was in short supply and there was not a clinically equivalent substitute product from within the existing framework catalogues, then NHS Supply Chain spoke to suppliers who could propose possible alternatives.

92. At the same time, there was a workstream led by NHSE lead clinicians to secure equipment needed for ICU beds, in addition to ventilators, such as ultrasound and patient monitors. NHS Supply Chain compiled production specifications and worked with the NHS Supply Chain's Capital Equipment Category Tower, which in turn worked with suppliers on their frameworks to determine certain supplier information, for example, equipment specification and availability, lead times and prices. We helped to co-ordinate and project manage this process. The supplier information was shared with the NHSE lead clinicians to agree which equipment models and volumes should be sourced. Chris Stirling liaised with DHSC Finance and Cabinet Office to gain approvals ahead of sourcing the equipment.

93. A survey was also developed by Deloitte, working with NHSE lead clinicians and NHS Supply Chain (reviewed and signed off by NHSE), which was issued to NHS Trusts to understand the existing equipment in use at local NHS Trusts, to consider the compatibility of what was used locally, for example to determine any additional staff training and consumable interoperability considerations.

G.4 Project Halo: Systems created / contributed to

94. From June 2020, Projects Halo and Octagon merged. Demand management was a key contingency measure to mitigate supply shortages. As I have already explained above, in Project Octagon Deloitte designed and built the Demand Management Process, including the suite of reports and dashboards needed

to monitor and manage volumes of ICU stock and the process mapping and training needed to deploy the process.

95. This methodology continued to be used in Project Halo to understand reasonable ordering thresholds from NHS Trusts. In Halo, however, the process was automated using a digital tool developed and deployed by Deloitte on NHSE systems. This enabled NHSE to access and refresh the relevant data directly. I believe the tool we developed is still running within NHSE as part of its business-as-usual operations [DC/34 - INQ*561561].

H Project Cube

96. Project Cube was the internal project name given to Deloitte's principal role supporting DHSC in setting up the National Testing Programme. Deloitte was approached on 18 March 2020 [DC/35 - INQ*561556] and subsequently engaged by DHSC to support the Government with building and delivering testing capacity, first to key workers and then expanding to mass population testing. I will be providing a detailed witness statement to Module 7 of the Inquiry describing Deloitte's work on the National Testing Programme. This statement explains those aspects of Cube that are relevant to Module 5.

97. Deloitte's work fell broadly into two phases based on the technology available: first, using PCR testing and, later, LFD testing. Of relevance to Module 5 is the role that Deloitte played in sourcing and distributing PCR sample collection kits[8] and LFD kits, together with the expertise it deployed in areas of:

(a) data collection and analysis;

(b) modelling and forecasting;

(c) inventory management; and

(d) supply chain management.

98. There were certain roles and responsibilities that remained with DHSC or wider government and were outside Deloitte's scope. In particular, Deloitte did not

[8] I will refer throughout this statement to 'sample collection kits'. This describes the materials such as swabs, vials, and liquid, which formed the 'kits' used to collect samples, as distributed to testing sites and other settings. The term 'test kits' can also be used to reference the kits used to analyse samples in the laboratories, but that is not generally how I have used the term in this statement.

decide to use specific suppliers, nor did we make the decisions on how the distribution of sample collection kits were prioritised. These were policy or strategy decisions that were taken by DHSC and/or Ministers, following which they relayed instructions to Deloitte and other parties working on the National Testing Programme. Deloitte contributed its skills and experience to help implement these instructions.

99. The main Deloitte LEP for Project Cube was Rob Parker, Deloitte's UK Lead for Major Programmes, leading on complex programme and transformation delivery. Deloitte also deployed specialist Partners to lead certain Project Cube workstreams, the following of which I believe to be within the scope of Module 5. They were:

(a) James Byles, Partner for Private Sector Industries across our Enterprise Technology and Performance business. James has 19 years' experience leading the creation, development, and transformation of supply chains particularly in the Retail industry. Prior to this, James held several operational management roles at Boots the Chemists, including within its supply chain functions. James is also a non-practicing pharmacist. James Byles was Deloitte's Project Cube Supply Chain lead;

(b) Kelly Miely, an Advisory Partner in our Retail & Consumer Products team. Kelly has over 20 years' experience designing and delivering fit for the future supply chain, buying and merchandising, and product development capabilities. Prior to joining Deloitte, she worked at an online e-commerce start-up and for a global retailer in planning, sourcing, and merchandising roles; and

(c) Scott Campbell, the lead Partner for our Deloitte Ventures team. Scott specialises in building non-standard, rapid-growth commercial business models for clients, i.e. growing a business alongside an already in-place incumbent business (which was, in many ways, what the introduction of LFD technology alongside PCR technology was).

100. Deloitte worked under the direction and oversight of senior civil servants at DHSC, with the structure, governance and leadership of the National Testing Programme changing over time, especially with the introduction of NHS Test

and Trace (a National Testing Programme organisation set up in May 2020) and later UKHSA [DC/36 - INQ*561554].

101. Our instructions from DHSC were to design and build a National Testing Programme at scale, which included all four nations, for which we understood that there would be variations in approach. Discussions and decisions around the devolved nations took place at the Government level, via DHSC. Deloitte was not involved in those discussions.

H.1 Summary of Relevant Project Cube Workstreams

102. Project Cube was broken down into work packages. The work packages that are relevant to Module 5 are those covering the sourcing and distribution of PCR and LFD tests. These work packages broadly covered the following areas:

(a) supply chain management;

(b) the roll out of LFD technology; and

(c) data collection, analysis and management.

103. Taking each of the above areas in turn:

H.2 Supply Chain Management

104. In March 2020, the National Testing Programme had to be built effectively from scratch to meet the target set by Rt Hon. Matt Hancock MP (the then Secretary of State for Health and Social Care) of 100,000 tests per day by the end of April 2020. The Government's preferred option (as instructed by DHSC) was to set up a test system (and supply chain) independent from the existing NHS infrastructure for testing. This was because the Government deemed the existing infrastructure as not suitable for national testing at scale due to its fragmented nature and the intense pressure it was already under.

105. An early role for Deloitte, starting on 19 March 2020 (our first day of work on the National Testing Programme), was to map out the process and set out the activities required to deliver PCR testing from beginning to end[9]. This process map was developed and flexed over time and became known as "the 168-stage process" (although in time it may not have had this exact number of steps)

[9] There was a different process for LFD testing which evolved later in 2020 / 2021.

[DC/37 - INQ*561552]. The 168-stage process was comprised broadly of three elements:

(a) Physical: mapping the products and infrastructure needed, such as sample collection kits, labs, warehouses, and transport;

(b) Digital: mapping the digital steps involved, such as registering personal information, booking a test, and collecting results; and

(c) Human: mapping the flow of citizens and what action they needed to take.

106. The process needed to cover the flow of products from inbound supply through to delivery to the different testing channels [10] (**Testing Channels**) and subsequent return of sample collection kits to labs to produce test results. Distinct areas of the 168-stage process relevant to Module 5, in which Deloitte played a role were:

(a) working with DHSC to assemble sample collection kits to fulfil demand and manage how they were allocated (as explained above, allocation prioritisation was driven by Ministerial policy decisions);

(b) co-ordination of the clinical validation of sample collection kits (done by clinical experts appointed by the Government, supported by Deloitte);

(c) co-ordinating Government-contracted logistics providers in the assembly and national distribution of sample collection kits to Testing Channels on a daily basis; and

(d) working with the National Testing Programme's logistics partners to establish and make operational a UK-wide logistics network for collection of test samples from the various Testing Channels to laboratories.

107. Deloitte's role in setting up the supply chain for the National Testing Programme involved adapting existing public sector supply chain practices within DHSC to align more closely with those typical in the commercial pharmaceutical and

[10] For example, delivery to testing sites, home delivery and collection, and the organisation-based "satellite" model to support delivery to care homes, prisons etc.

consumer goods sectors, so as to be able to scale to multiple testing and onward distribution locations and deliver an at-home service.

H.3 Sourcing of PCR testing sample collection kits

108. The term 'sample collection kit' describes the materials such as swabs, vials, and liquid, which formed the 'kits' used to collect PCR samples, as distributed to test sites and other settings. It was these sample collection kits, and their component parts, which were the specific focus for Deloitte, not PCR test kits, which encompassed the reagents that were used in laboratories.

109. Prior to Deloitte's involvement in the National Testing Programme, DHSC had agreed a purchase order with Thermo Fisher to supply PCR testing sample collection kits, including component parts, as well as the necessary reagents and testing platforms for use in laboratories. However, this was not a viable long-term solution as Thermo Fisher could not supply at sufficient scale for mass population testing. Globally, there was a limited supply of the component parts for PCR testing sample collection kits and numerous entities (NHS and others) both in the UK and globally were trying to obtain those kits. A supply chain team, set up within the NHS, had responsibility for allocations within the UK. That team would decide the allocation of PCR sample collection kits, once procured. Deloitte supported the NHS by collating information and facilitating the governance required to make DHSC/NHSE allocations work.

110. In the National Testing Programme's early stages, various PCR sample collection kits were considered, including kits assembled with components from different suppliers. This caused initial challenges for the automation of laboratory processes, as the components were not all aligned to specific measurements (i.e. they came in different shapes and sizes) having been procured due to availability and having met clinical validation requirements. Given the need to increase throughput by automation of processes, the National Testing Programme later adopted a standard specification.

H.4 Validation of PCR testing sample collection kits

111. Before PCR sample collection kits could be used on the National Testing Programme they needed clinical validation. Deloitte was engaged by DHSC to help co-ordinate a validation team of Public Health England (**PHE**) scientists (based at the scientific research facility at Porton Down near Salisbury) and

scientists from the University of Oxford as they dealt with scientific validations for PCR sample collection kits (and later LFDs). The scientific and clinical validation process was led by the University of Oxford's Infectious Diseases & Microbiology Group, Professor Tim Peto, Professor Derrick Crook, and Professor Sir John Bell. There was also a group of PHE scientists based at Porton Down led by Alex Sienkiewicz of UKHSA, who conducted scientific testing, including relating to the scientific validation of PCR sample collection kits (and later LFDs).

H.5 Distributing PCR testing sample collection kits and scaling the supply chain

112. The initial challenges the National Testing Programme faced included having to set up a fully functional supply chain at pace to meet the Government's increasing testing targets, whilst operating with significant supply constraints due to the worldwide shortages of sample collection kit components that met the validation requirements of the National Testing Programme (for example, the ability to detect the virus after 72 hours, to be sterile and have a CE marking). In addition, there was no existing or predictable forecast for demand in relation to the Testing Channels, which created initial complexities regarding the allocation of supplies.

113. Deloitte's role included working with Government-appointed third-party logistics providers to create a central supply chain process (by which I mean inventory management, kitting (collating the components of the sample collection kits) and facilitating daily supply capacity utilisation meetings) and system capacity management (i.e. building processes to balance demand and supply, modelled on the standard consumer packaged goods sales and operations planning process).

H.6 Roll out of LFD Technology

114. Although PCR tests had been used for some asymptomatic testing policies during 2020, there were challenges with this technology including turnaround times, the need for a lab to process the results, and the significant costs and resources associated with logistics and processing, all of which meant that PCRs alone were not appropriate to deliver testing at the scales needed for mass population testing.

115. By Autumn 2020, there was strategic direction from the Government about preparing for mass testing of asymptomatic individuals. This was known as 'Operation Moonshot'. This coincided with increased understanding of the virus, namely that asymptomatic individuals could transmit the disease. The development of asymptomatic testing was hugely complex, but essentially the National Testing Programme needed to consider whether mass asymptomatic testing was a viable approach and whether, operationally, mass testing of asymptomatic people could be achieved. This phase also marked a shift towards considering alternative supply and manufacturing within the UK.

116. A particular milestone in the National Testing Programme was, therefore, getting LFDs validated for use. During the summer of 2020 an LFD oversight group (chaired by Professor Sir John Bell at the University of Oxford) was set up to coordinate activities relating to whether and how LFDs could be used in the National Testing Programme. PHE had already carried out some early pilot studies, which had informed the Government's decision to explore the LFD route. Porton Down and University of Oxford had also been running some preliminary laboratory research and some of the early human trials to establish whether LFDs would work in principle as a mass testing device. Following the conclusion that LFDs would work, Deloitte supported DHSC with the planning for validation, initial rollout of testing, and subsequent scaling of LFD technology.

117. This technology was a step change for the National Testing Programme. It overcame some of the challenges of PCR tests as the processes for PCRs and LFDs were fundamentally different; LFDs were a self-testing method (which made it easier for people to get tests), there was no need for laboratory processing of test samples and they produced quicker results. It also reduced costs and significantly increased the ability to scale testing capacity and operations. As with PCR testing, Deloitte assisted DHSC with designing the end-to-end process of LFD testing.

118. Throughout the pandemic response, as knowledge of the virus and its behaviour developed, the Government made and adapted policy decisions which affected the procurement and deployment of testing technologies. For

example, in 2021 the introduction of the Home Channel[11] and community testing, which enabled citizens to take a test at home and submit the results themselves, was a significant driver of growth in demand for LFDs. This was then followed by the direct availability of tests from third parties commercially i.e. consumer and retail outlets, which again drove up demand for the test kits.

H.7 Project Cube: Systems created / contributed to

119. In the context of Project Cube, and of particular relevance to Module 5, Deloitte created and/or contributed to the following data and inventory management systems:

(a) In early 2020, it became evident that the National Testing Programme needed a system capable of tracking supplies from warehouses to test sites and from sites to labs. Initially, the replenishment of supplies was being managed using an Excel spreadsheet, which was neither efficient nor scalable. This led to Deloitte's implementation, on DHSC's instructions, of the 'Supply Planning Tool' (built on third party, Oracle, software), which became an automated replenishment solution to restock test sites and to enable inventory management by onsite teams and was also used at the labs enabling them to record the quantity of specific items that they had in their stores. The Supply Planning Tool provided a dynamic supply planning system for sites, incorporating demand forecasting and resulting in a reduction in manual orders and leaner inventory on sites. This was rolled out to all live test sites in line with test site openings until around March 2021, allowing the National Testing Programme to anticipate testing levels across 500+ test sites, moving away from the reactionary and manual processes that were in place at the outset.

(b) In the three months between 19 March and 19 June 2020, Deloitte also developed six testing applications for use by testing sites and laboratories. Of relevance to Module 5 was the Inventory App, which enabled test site staff to perform inventory management tasks.

[11] The Amazon-delivered home sample collection kits which were to be completed by citizens at home, through providing electronic guidance, basic data capture of the at-home process, and clear next steps on return logistics i.e. how to submit self-test samples.

I Deloitte Observations on Strengths, Weaknesses and Lessons Learned

120. In this part of this witness statement, I set out Deloitte's reflections on strengths and weaknesses across the UK's procurement and distribution of key healthcare equipment and supplies during the pandemic throughout the various projects referenced above, as well as some lessons arising out of our roles. These may be specific Deloitte reflections, or Deloitte observations on the reflections of others. Where they are Deloitte reflections, they represent views collected from the Deloitte LEPs and others named or referenced in this witness statement who were involved in respect of specific aspects of those projects.

I.1 Civil Service, Military, Public and Private sectors

121. Throughout each of the above projects, Deloitte worked closely with the civil service, (some of whom we had worked with previously on other projects such as EU Exit planning), the military and public and private sectors. Everyone involved worked effectively together as one, with a common goal in supporting the national response to the pandemic. We saw extraordinary personnel and organisational efforts from our own colleagues and those we worked with.

122. We believe though that there are opportunities to further improve the process for involving the private sector in emergency situations. There is value in building broader relationships between the private and public sectors outside of a crisis environment to ensure preparedness. One example would be to expand business continuity planning exercises to regular events, with the private sector playing an integral part to enable planning for 'extreme events'. These exercises could include working with key logistics and distribution providers and technology and data partners. The commitment to support planning and execution of these exercises could be part of a Supplier's 'social value' commitment or similar to Government.

123. To the best of my knowledge, the Government has developed business continuity plans for many possible major events. The pandemic event continuity plans were predicated on the SARS/bird flu scenario from 2003. In-depth wargaming with cross-government departments, academia and private sector would enable Government to identify potential pinch points in its plans, for example, the physical distribution of PPE products held centrally to local care providers.

124. It is fair to say that given the unprecedented situation and systemic challenges inherent in the Covid-19 response, work was initially carried out on a reactive basis and at pace. As the pandemic progressed however, layers of process, technology and data analysis were built in to scale up and enhance the procurement and distribution of key healthcare equipment and supplies. This is an important legacy which should be captured.

I.2 Modelling and forecasting

125. A scientific evidence-based approach was taken by Government to inform key decisions; NHS lead clinicians consulted counterparts in China and Italy for Covid-19 clinical pathways and NHSE data modellers developed projected patient numbers using those pathways. As the disease advanced, appropriate clinical pathways, together with projected patient numbers and timing of 'waves' evolved. The initial assumptions that underpinned ICU consumables changed; leading in some cases to a lower volume of products and equipment required. For some equipment such as patient monitors and some ICU consumables, where it became apparent the volume required was lower, orders were cancelled/volumes reduced in mutual agreement with suppliers. A key lesson learned is the ability to build a network of experienced data modellers able to work with clinicians and supply chain experts to develop forecast volumes against a range of scenarios and peg contracted supply volumes to these scenarios with appropriate break clauses to reduce/increase volumes as scenarios are fine tuned.

I.3 Supply chain management

126. A strength for ICU consumables and associated equipment was the UK's ability to utilise the existing NHS supply chain. For a number of products required, the national procurement route provided:

(a) pre-agreed supplier frameworks in place for sourcing products;

(b) a unified system for ordering, warehousing, and logistics to procure and deliver products to NHS organisations; and

(c) warehouse capability and capacity to store products nationally and enable sensitive demand management to deliver products to NHS organisations with the greatest clinical need.

127. However, given the unprecedented need for supply of key healthcare equipment and other supplies there were challenges around the scarcity of supply in the existing supply chain, the ability to source products that met the clinical specification required, and with warehousing and logistics capacity to transport, receive, store, and distribute such equipment. An example of this was PPE where the level of demand for product, logistics and distribution were at a level that the existing channels were unable to scale. Lessons learned from this pandemic are that the NHS Supply Chain channels could be strengthened through:

(a) detailed product specifications to enable direct to manufacture sourcing and visibility of the supply chain to understand the key manufacturers and raw material sources to facilitate awareness of end-to-end resilience and available mitigations;

(b) capability to source direct from manufacturers (as opposed to a number of UK distributors), test product functionality locally, and capability within the existing supply chain management systems to conduct global transport management, yard, and port logistics (and to maintain consignment visibility and tracking); and

(c) for clinically critical products, consideration of supply chain resilience measures, for example, near shore/domestic manufacture. It would be beneficial to collate the total UK demand and supply to enable visibility of supply chains and where appropriate aggregate that supply to enable national resilience through domestic manufacturing and local raw material supply where appropriate. There are now several UK manufacturers and suppliers with the technical know-how, regulatory approval and skill and scale to fulfil the UK's need in relation to PPE and other healthcare equipment.

128. The planning undertaken by DHSC ahead of the UK's exit from the EU provided a good foundation for some contingency measures, including:

(a) the NSDR helpline was re-purposed rapidly for the CPC to manage product shortages primarily for domestic PPE shortages;

(b) the stockpile and list of clinically critical products (already endorsed by NHS lead clinicians) were a helpful resource for a number of ICU consumable shortages; and

(c) DHSC had an international freight capability mobilised that was re-purposed (the Covid-19 response required different freight channels and capacity). This EU Exit contingency plan addressed supply across the four nations and meant that Government had a better understanding of the key supply chain relationships.

129. In terms of PCR and LFD tests, a strength was the genomic research which had already been undertaken in the UK, which allowed the rapid deployment of PCR testing early in the pandemic to give reliable results. This was a useful building block whilst other testing technologies, such as LFD tests, could be evaluated and proven. Deloitte believes that it would be beneficial for a future pandemic to maintain UK domestic manufacturing capacity for key elements of PCR sample collection kits, such as vials, swabs and critical reagents, and LFD kits. For example, an agreement with chemical providers to hold or guarantee supply of critical reagents; more than once basic chemical supply was an issue during the Covid-19 response.

130. A key lesson learned is that having a defined, designed, and operable supply chain to support extending diagnostic testing would be sensible and achievable (I note that affordability is an issue to be considered by others). The premise should be that for any highly infection disease that is novel and is deemed serious (with, for example Spanish Flu, Covid-19, SARS-I, HIV, meeting these thresholds), having the ability to scale testing will always be advantageous.

I.4 Data collection and analysis

131 Legacy technology and a lack of interoperability between NHS organisations did not fully allow for a national overview of stock levels for efficient distribution, data insights, visibility into supplier stock availability or local demand during the pandemic. The federated nature of the NHS does not easily lend itself to a centralised national view and this was evident in the technology.

132 Deploying modern technology architecture was a key component of scaling up the projects we worked on. Some of the systems were initially created in Excel spreadsheets but to scale up the projects, digital tools and data analysis were

required, which Deloitte designed, built and/or enhanced to create reports and systems to support Government's decision making. Examples include:

(a) Atamis – software already being configured by DHSC to cover procurement and contract management, which we enhanced to include management of PPE activity (built on Salesforce);

(b) CPC Case Management Solution – a case management service capturing the demand, availability and delivery of PPE from/to the NHS and social care providers (built on ServiceNow);

(c) Advanced Excel-based models, for example, Sequel, Tableau dashboards for:

(i) capacity modelling to understand the air freight requirements used to report PPE inbound stock into the UK;

(ii) ICU Consumables Demand Management Dashboard for NHSE to identify products at potential risk of shortage, determine thresholds which could be used to review order quantities from NHS Trusts and the reporting thereof;

(d) Supporting NHSE with the development of an NHS Trust Inventory management data collection process to enable national visibility for stock levels of products (a key information source where stock levels were critically low);

(e) The Supply Planning Tool (built on Oracle) to track supplies from warehouses to test sites and from sites to labs, creating automated replenishment of stock and improving the replenishment of supplies and incorporated demand forecasting; and

(f) Inventory app – to enable site staff to perform inventory management tasks.

133. Many (if not all) of these tools and dashboards that Deloitte created or enhanced were transferred back to the Government and I understand some continue to be used within its business-as-usual environment, for example Atamis and the Demand Management Process.

134. If the UK is required to respond to a similar pandemic, many aspects of these projects could be replicated, and the existing knowledge and experience drawn upon. As such, the knowledge of these projects which still resides in DHSC, NHSE and other government departments is an important legacy and should be captured (if not done already).

135. The investment in modern technology platforms at a national and local level would enable real-time insights on stock levels and local demand patterns to enable improved supply chain forecasting. This would facilitate a more effective and efficient supply chain during BAU, the ability to identify early changes in demand patterns, scale up or down demand capacity, and give the ability to digitally deploy demand management.

I.5 Closing remarks

136. Finally, I want to take this opportunity to say that across all workstreams and at all levels of seniority, individuals within Deloitte reported that this was likely the most important project on which they will ever work. They felt direct and personal responsibility for the success of the projects and would wish for me to communicate this as part of the statement on behalf of Deloitte.

137. Across all the projects referenced within this statement, there were many people from across the civil service, military, public and private sectors working together, often when the disease was at its most virulent and uncertain. That dedication was remarkable. Everyone involved was working together as one towards a common goal in supporting the national response to the pandemic. The skills, expertise, professionalism, and commitment of those individuals was paramount to the success of each project. Deloitte is proud to have been one part of this immense national team effort.

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.

Signe Personal Data

Dated: 23rd January 2025

Schedule 1

Table of Engagements

No.	Deloitte Project Name	Client name	Contract Start Date / Effective Date	Contract End Date	Short description of scope	Key Client Contacts	Deloitte Lead Engagement Partner
1	Triangle	Cabinet Office	14 March 2020	31 March 2021	Supporting the set-up of a new supply chain for PPE.	Buy Dr Emily Lawson (NHSE), Chris Stirling (DHSC), Andy Wood (Cabinet Office) Deliver Nick Parkes (DHSC) Make Eric Finton-James (DHSC), Andy Wood (DHSC), Jo Newman (DHSC),	Colin Terry and Fiona Downing (from July 2020)

No.	Deloitte Project Name	Client name	Contract Start Date / Effective Date	Contract End Date	Short description of scope	Key Client Contacts	Deloitte Lead Engagement Partner
						Peter Stanton-Ife (DHSC), Gary Horsfield (DHSC). <u>Re-use</u> Emmi Poteliakhoff (NHSE), Eline Soete (DHSC)	
2	Arrow	NHS England and Improvement	17 March 2020	31 March 2021	Provision of support to set up and run a Commercial Procurement Cell.	Dr Emily Lawson (NHSE), Lois Shield (NHSE)	Catherine Skilton
3	Ivy	NHS Wales Shared Services Partnership	15 April 2020	29 May 2020	Project management personnel and data analytics expertise to help NWSSP understand PPE	Dr Alan Brace (NWSSP)	Gus Miah

No.	Deloitte Project Name	Client name	Contract Start Date / Effective Date	Contract End Date	Short description of scope	Key Client Contacts	Deloitte Lead Engagement Partner
					supply and demand across Wales.		
4	Spider	NHS National Services Scotland	3 April 2020	28 May 2020	PPE supply chain modelling, including providing end-to-end process mapping, validation of the demand model and a visualisation of the end-to-end supply chain.	National Services Scotland	Angela Mitchell
5	Octagon	NHS England	20 April 2020	30 June 2020	Supply and demand management of ICU consumables and Trust ordering patterns.	Preeya Bailie (NHSE), Dr Emily Lawson (NHSE)	George Johnston, Fiona Downing
6	Halo	DHSC	16 March 2020	31 March 2022	Sourcing equipment and critical care	Chris Stirling (DHSC)	Fiona Downing

No.	Deloitte Project Name	Client name	Contract Start Date / Effective Date	Contract End Date	Short description of scope	Key Client Contacts	Deloitte Lead Engagement Partner
					consumables for 35,000 new NHS ICU beds nationally.		
7	Cube	DHSC	19 March 2020	19 July 2022	Supporting DHSC to build and scale Covid-19 testing capacity.	Kristen McLeod CBE (DHSC), Alex Cooper (DHSC)	Rob Parker

Schedule 2

Glossary of Key Individuals named in this Statement

(The table below comprises the names and roles of individuals referenced within the Module 5 statement but may not capture changes to their roles since)

Name	Role/Background/Experience as at 2020/2021
Deloitte	
Byles, James	Partner for Private Sector Industries across our Enterprise Technology and Performance business. James has 19 years' experience leading the creation, development, and transformation of supply chains particularly in the Retail industry. Prior to this, James held several operational management roles at Boots the Chemists, including within its supply chain functions. James is also a non-practicing pharmacist. James Byles was Deloitte's Project Cube Supply Chain lead.
Campbell, Scott	Lead Partner for our Deloitte Ventures team. Scott specialises in building non-standard, rapid-growth commercial business models for clients, i.e. growing a business alongside an already in-place incumbent business (which was, in many ways, what the introduction of LFD technology alongside PCR technology was).
Cook, Dominic	Partner in the Major Programmes team at Deloitte. Prior to joining Deloitte, he was a qualified lawyer at international law firm Bird & Bird LLP for 26 years, 20 years of which he was a Partner. During that time, he held various management roles including Head of Commercial, Executive Director on the Global Board and Management Committee member. Since joining Deloitte, he has acted as a lead in the governance and review of a range of significant public sector engagements. Such engagements have spanned across health, IT, defence, and justice.
Downing, Fiona	Partner who leads Deloitte's Public Sector Healthcare Supply Chain practice. She has over 20 years' experience driving procurement and supply chain transformation across private

Name	Role/Background/Experience as at 2020/2021
	and public sector, including deploying end to end digital platforms, process design and improvement. She has extensive experience leading public sector transformation engagements across Health and Local Regional Government. Fiona was the Lead Partner for NHSEs Procurement Target Operating Model and DHSC's EU Exit response planning
Johnston, George	Leader in Deloitte's AI and Data practice. He specialises in delivering scalable, transformative solutions for clients in the technology, media, and telecoms sectors.
Miah, Gus	Was a Partner with over 25 years' of experience working with leading healthcare and communication organisations throughout the UK advising them on operational, financial, and digital strategies. He has supported an ecosystem of healthcare technology startups in AI, cyber, analytics and voice recognition. Gus no longer works at Deloitte.
Miely, Kelly	Advisory Partner in our Retail & Consumer Products team. Kelly has over 20 years' experience designing and delivering fit for the future supply chain, buying and merchandising, and product development capabilities. Prior to joining Deloitte, she worked at an online e-commerce start-up and for a global retailer in planning, sourcing, and merchandising roles.
Mitchell, Angela	Partner who leads Deloitte's government and public sector business in Scotland and has overall responsibility for our portfolio of work across government, justice, local government, health and education. She has extensive experience in leading complex, business critical, technology focused projects for clients such as the Scottish Government, NHS Scotland and Social Security Scotland.
Parker, Rob	UK leader of Deloitte Major Programmes, leading on complex programme and transformation delivery.
Skilton, Catherine	Was a Partner in the Health Systems sector with more than 20 years' experience of working with Boards to deliver sustainable, digitally enabled change across care model transformation, mergers & acquisitions, and financial and operational improvement within the NHS. Catherine no longer works at Deloitte.

Name	Role/Background/Experience as at 2020/2021
Terry, Colin	Partner in Deloitte's Life Sciences practice with over 20 years' experience in life sciences (pharmaceuticals and medical devices) including supply chain, R&D and general management. His client advisory work ranges across R&D strategy and operations to cost reduction including procurement.
Government Ministers and MPs	
Deighton, Paul (Lord, Rt Hon) KBE	Appointed by DHSC to lead the UK's effort to boost PPE production and scale up the engineering efforts of small companies who were able to contribute supplies.
Hancock, Matt MP (Rt Hon)	Former Secretary of State for Health and Social Care
DHSC	
Balding, Steve	Commercial Systems and Data Strategy, Commercial Directorate
Cooper, Alex	Mass Testing Operations Director
Finton-James, Eric	Deputy Director for Operational Strategy in the PPE Policy and Strategy Directorate
Horsfield, Gary	COO, UK PPE
McLeod, Kristen	Director, Office for Life Sciences. Senior Responsible Officer for the UK Testing Programme
Newman, Jo	Deputy Director, PPE Buy Cell: Operations
Oldfield, Steve	Chief Commercial Officer
Parkes, Nick	Freight and Logistics Lead, Strategic Supply and Resilience Directorate
Soete, Eline	PPE Chemicals & Plastics Category Lead
Stanton-Ife, Peter	Lead External Relations, PPE Make Team Cabinet Office
Stirling, Chris	Commercial Directorate
Williams, David	Director General of Finance (appointed Second Permanent Secretary in March 2020)
Wood, Andy	PPE Cell Buying Lead, Complex Transactions for Cabinet Office

Name	Role/Background/Experience as at 2020/2021
UKHSA	
Sienkiewicz, Alex	Director, UKHSA
NHS & other public health organisations	
Bailie, Preeya	Director of Procurement Transformation and Commercial Delivery, Commercial Directorate, NHS England
Brace, Alan (Dr)	Director of Finance, Health and Social Services, Welsh Government
Lawson, Emily (Dr)	Chief Commercial Officer, NHS England & NHS Improvement
Poteliakhoff, Emmi	Coordinating Director Treatment and Supply (Oxygen, ventilators, medicines, and other supplies) workstreams for covid-19), NHS England and NHS Improvement
Shield, Lois	Non-Medicines Contingency Planner for EU Exit, Commercial Procurement Cell SRO, NHS England & NHS Improvement
Universities	
Bell, John (Professor Sir)	Leader of the Infections Diseases & Microbiology Group, the University of Oxford
Crook, Derrick (Professor)	Professor of Microbiology, the University of Oxford and Consultant in Microbiology and Infectious Diseases, NHS Oxford
Peto, Tim (Professor)	Leader of the Infections Diseases & Microbiology Group, the University of Oxford

Schedule 3

Glossary of Acronyms

CPC	Commercial Procurement Cell
DHSC	Department of Health and Social Care
ICU	Intensive Care Unit
LEP or LEPs	Lead Engagement Partner(s)
LFD	Lateral Flow Device
MHRA	Medicines and Healthcare Products Regulatory Agency
NHSE	NHS England and NHS England and Improvement
NSS	NHS National Services Scotland
NSDR	National Supply Disruption Response
NWSSP	NHS Wales Shared Services Partnership
PCR	Polymerase Chain Reaction
PHE	Public Health England
PPE	Personal Protective Equipment
R&D	Research and Development
SMOG	Shortage Management Oversight Group
UKHSA	UK Health Security Agency