Witness Name: Dame Emily Lawson

Statement No: 1

Exhibits: [EL/001] – **[EL/083]**

Dated: 8 August 2024

UK COVID-19 INQUIRY

Module 4

FIRST WITNESS STATEMENT OF DAME EMILY LAWSON

I, Dame Emily Lawson PhD, of NHS England (Wellington House, 133-135 Waterloo Road, London, SE1 8UG), will say as follows:

Introduction

1. I am the Chief Operating Officer (Interim) ("**COO**") of NHS England, a post I have held since 1 November 2023. I am also an executive member of the Board of NHS England.

2. I make this witness statement ("**Statement**") in response to the UK Covid-19 Inquiry's Rule 9 request for evidence dated 19 October 2023 under Module 4 of the Inquiry ("**the Module 4 Rule 9 Request**"), which examines a range of issues relating to the development of Covid-19 vaccines and the implementation of the vaccine rollout programme in England, Wales, Scotland and Northern Ireland and issues relating to the treatment of Covid-19 through both existing and new medications. I understand that the Module 4 Rule 9 Request focuses on the period of time between 30 January 2020 and 28 June 2022 ("**Relevant Period**").

3. As set out more fully below, in the last 6 years I have principally worked at NHS England and No10 Downing Street, starting in NHS England in November 2017 before moving to No10 in July 2021. I briefly returned to my role in NHS England to lead the vaccine programme again in October 2021 until March 2022 when I returned to the No10 role.

This Statement

4. This Statement aims to respond to topics and questions set out in the Module 4 Rule 9 Request, without seeking to duplicate the extensive factual material provided to the Inquiry by NHS England in the Witness Statement of Steve Russell ("**CWS**"), on which I have partly relied. As suggested by the Inquiry, this Statement adopts its own structure whilst aiming to answer the Inquiry's requests for information comprehensively.

5. In this Statement I have referred to NHS England, the Department of Health and Social Care ("**DHSC**") and the Secretary of State for Health and Social Care ("**SSHSC**") in accordance with how they are structured today, but such references include all predecessor organisations and roles as the context may require.

6. NHS Trusts and NHS Foundation Trusts are referred to collectively as "Trusts" in this Statement unless otherwise stated.

7. This Statement has the following sections:

   a. Section 1: Introduction

   b. Section 2: My background, experience and role descriptions

   c. Section 3: Planning for a large-scale vaccination programme

   d. Section 4: Preparing for Day One

   e. Section 5: Scaling the operation

   f. Section 6: Adapting the response

   g. Section 7: Building confidence in the deployment programme

   h. Section 8: Communications and engagement, public messaging

   i. Section 9: Autumn Covid-19 vaccination campaign in preparation for winter

   j. Section 10: Working with Stakeholders

   k. Section 11: Judging the success of the programme

8. My reflection on the leadership learning is made throughout this Statement, whilst my observations on what worked well with other agencies and partners are mainly confined to Section 10 dealing with those matters. In Section 11 I summarise the overall learnings I think will support this Inquiry.

My background, experience and role

My recent career

9. From 1 November 2017 to 1 April 2020 I was employed by NHS England, initially as National Director for Transformation and Corporate Operations ("**ND TCO**"). During this period, from 11 December 2018 I held the same position on the senior leadership team for the joint NHS England and NHS Improvement organisation. My responsibilities were for the internal functions of first NHS England and then the joint organisation (HR, IT, Estates), for the improvement functions of NHS England and for

the primary care support services ("**PCSE**") contract. As part of this set of responsibilities I led the design and integration process for NHS England and NHS Improvement from 11 December 2018 to 1 July 2019.

10. Formally from 1 April 2020 to 16 July 2021 I held the title of Chief Commercial Officer ("**CCO**") of NHS England and NHS Improvement. I had stepped up previously to support the commercial function as acting head from 1 July 2019 when there was no one in the newly created role due to the reorganisation of NHS England and NHS Improvement. A recruitment campaign did not identify the right candidate and my background in the private sector meant I had relevant skills. My responsibilities as CCO were for procurement, estates, innovation, and other key commercial functions across the health service.

11. However, almost immediately on formal appointment as CCO I became involved with the Covid-19 response, focusing on ensuring supply and distribution of ventilators and shortly after, personal protective equipment ("**PPE**") working integrally with the DHSC and others, in what became known as the parallel supply chain. For some of this period I was seconded to DHSC to recognise the cross-working. As I say later in this Statement, this became more than a full time set of responsibilities. It was during my time in this part of the Covid-19 response that I worked with the 101 Logistics Battalion ("**101 Log**"), and with external contractors with experience of supply chain and logistics, which further developed the familiarity I had developed in this area in the private sector.

12. From 9 November 2020 to 16 July 2021 I was National Director for Covid Vaccine deployment, NHS England. During this time I also maintained some responsibilities for the CCO role but I was no longer involved in the PPE function other than as an advisor on request, as the vaccine Senior Responsible Officer ("**SRO**") role required full time attention.

13. From 19 July 2021 to 22 October 2021 I was employed as Head of the Prime Minister's Delivery Unit, a role that the Cabinet Secretary and Prime Minister ("**PM**") Boris Johnson created and requested that I take up. I was on secondment in this role. My responsibilities were to establish the unit, hire people into roles, establish relationships across government, develop delivery intellectual property, processes, skills, and tools, and thereby support delivery of programmes related to the PM's top five missions.

14. From 25 October 2021 to 31 March 2022 I returned to NHS England as National Director, Vaccine deployment. My responsibilities were to ensure the winter booster campaign for Covid vaccination, and the seasonal flu programme, were successful.

15. I rejoined No10 in April 2022 and continued until 1 September 2023. Until 24 January 2023 my title was Head of the Prime Minister's Delivery Unit at No10 Downing Street. I had responsibility both for the Delivery Unit and for the No10 Data Science team. I was employed full time in that role by the Cabinet Office, on secondment from my substantive employment at NHS England. On 25 January 2023 the Delivery Group was created across No10 and the Cabinet Office. The Delivery Group consists of the No10 Delivery Unit, the No10 Data Science team, the Cabinet Office Evaluation Taskforce, the Cabinet Office Delivery architecture team, and the Cabinet Office Government Strategic Management Office ("**GSMO**").

Prior career summary

16. The Inquiry has asked for my insights into various aspects of the vaccination programme, regarding which I think it is worth providing some information about my education and career history more generally.

17. I obtained an undergraduate degree in Natural Sciences (Genetics) from the University of Cambridge, followed by a PhD in molecular genetics from the John Innes Institute (University of East Anglia). I then did postdoctoral research at the University of Pennsylvania in genetics. I left academia to join a biotechnology company called Avitech Diagnostics in Malvern, Pennsylvania, as Manager of Business Development.

18. I then joined the management consultancy firm McKinsey and Company in London, where I specialised over time in supporting organisations to make long term, sustainable improvements in performance, including playing leadership roles in the Human Capital part of McKinsey's organisation practice. I also led the Women Matter research and publication from 2010 to 2012. I served clients in multiple industries including Health, Pharmaceuticals, telecoms, banking, and manufacturing. I conducted one piece of work for the NHS over that period.

19. From September 2013 to May 2015 I was the HR Director at Morrisons plc, a UK supermarket chain with a manufacturing and distribution business. From September 2015 to September 2016 I was Chief People Officer at Kingfisher plc, an international retailer.

Relationship of roles to the matters discussed in this Statement

20. As SRO for vaccine deployment from 9 November 2020 I had accountability for the deployment of the Covid-19 vaccine in England. Vaccine supply into the UK was managed by the Vaccine Task Force ("**VTF**") and each deployment programme (for Wales, Scotland and Northern Ireland) was then responsible for vaccinating their populations. This meant that both strategy and operations design and delivery were the responsibility of the relevant national team. As SRO for the vaccine deployment programme in England, I was responsible for the design, development and contracting of the England supply chain; the identification, contracting (as needed) and oversight of vaccine sites; NHS marketing, communications and engagement to drive uptake; data and technology design, development, operations and security; strategy and planning development; and execution, governance and reporting. This is explored further below.

21. As Head of the No10 Delivery Unit from 19 July 2021 to 22 October 2021 I created and managed teams working to ensure the delivery of the PM's five priority areas. One of the five areas was health, within which vaccines was part of the areas of interest. I provided insight into No10 discussions on vaccines and offered support to the NHS England team when requested.

22. I reflect now on how the opportunities I have been given in my career contributed critical skills and experience to my ability to lead the vaccine work, which I often said meant that we were "building a medium sized supermarket chain and transporting gold":

    a. At McKinsey, I conducted several operational improvement studies and became experienced in lean operations and operational improvement. I benefitted from extensive training in leadership, which I then put into practice and looked to fine tune through all my line management roles. Many of my decisions in the vaccination programme and reflections more generally derive from this lens.

    b. Also at McKinsey I developed my skills in deriving insights and challenging assumptions from data, and my skills in problem solving. I was fortunate that by the time of the pandemic, I also had 7 years of 'real world experience' in applying those skills to the decisions I had needed to make in complex public and private-sector organisations.

c. At both Kingfisher and Morrisons I took part in executive decision-making on multiple topics including supply chain development and management, as well as commercial strategy and delivery.

d. My understanding of supply chain and logistics management was then further developed through my role in the creation and operation of the parallel supply chain in the PPE programme from March to November 2020. This parallel supply chain was required to bring PPE into the country and distribute it where it was needed, as the existing supply chain and logistics operation did not have the capacity to scale up to the needs of the pandemic. During the PPE response I brought in external expertise from the Army (101 Log), supply chain specialists, and technology and strategy consultants. I held twice-daily meetings to oversee and resolve issues with contracting, supply and distribution, oversaw the building and deployment of a demand model, and adapted our approaches in response to feedback, particularly to ensure all staff groups had access to PPE that worked for them as well as for patients. I was able to see the highly specialised nature of incident logistics from the Army in particular and knew the difference they could make to a scalable project like mass vaccination.

e. In leading the NHS PPE response, I developed close working relationships with teams across government in departments such as DHSC, Cabinet Office, Foreign, Commonwealth & Development Office ("**FCDO**"), Department of International Trade ("**DIT**") and HM Treasury ("**HMT**"), and reported regularly to No10. This included the Covid-19 taskforce team in the Cabinet Office, the commercial and clinical teams in DHSC, local 'station' teams in FCDO, in particular the Beijing team and HM Ambassador there, the health teams in DIT, and the public spending and health teams in HMT.

f. First as ND TCO and then as CCO at NHS England I had responsibility for NHS contracting and supplier relationships, as well as relationships with the NHS procurement community – the approximately 4000 NHS staff who work in procurement, largely in Trusts but also in specialised procurement organisations. I oversaw the management of the NHS Business Services Authority missing correspondence incident, and worked with Capita to restore performance and confidence in the PCSE contract.

Planning for a large-scale vaccination programme

23. By way of background, in April 2020 the VTF was set up as an entity within the Department of Business, Energy and Industrial Strategy ("**BEIS**"). The VTF rapidly created a portfolio of likely vaccine candidates, including some facilitation of relationships between academic centres, manufacturers and pharma companies. It also worked to identify opportunities to give the UK vaccine security – not just for Covid-19, but beyond.

24. In June 2020 the SSHSC asked Simon Stevens to take responsibility for planning deployment of a potential vaccine in England. NHS England then set up a project team that started the work to plan deployment.

25. I would characterise the early period, before it was clear that there would be an administrable vaccine, as one of useful planning but necessarily constrained by the unknowns. It was during this period that the NHS put together plans for the various elements of a roll out programme as described in the CWS. These elements would later need to be brought together, and where necessary adapted, to take them from individual parts of a plan through to reality. In my view, this period created the building blocks which would help to ensure the NHS could respond when a vaccine was confirmed, and when things needed to change – more resources, refreshed governance – they did, and fast.

26. During the planning stage the NHS England team delivered some of the essential components of deployment. These were:

    a. Identification of the different types of vaccination sites planned to be used. Initially these included fixed mass vaccination sites, mobile mass vaccination sites, hospitals, and a potential roving model for care home residents and those who were housebound **[EL/001 - INQ000414393]**.

    b. A 'pod' model (which was tested with clinical staff from the front line and volunteers) to confirm the blueprint/specification for the optimised delivery of vaccinations within a set time period. The pod model defined the number of staff members, physical space requirements to operate a Covid-19 safe environment, and the volumes of consumables (such as PPE, needles and syringes) and equipment (such as temperature-controlled storage for the vaccines, chairs, screens etc.) needed. The 'pod' model could then be multiplied to facilitate

planning – e.g. four pods on a mass vaccination site and a single pod for a primary care site **[EL/002 - INQ000113288] [EL/003 - INQ000421363]**.

c. Proposed plans for the supply chain to distribute the equipment needed (including the vaccine itself, once the vaccine reached the English supply chain) to the vaccination sites **[EL/004 - INQ000421395]**.

d. A plan to build a booking system for mass vaccination centres[1].

e. A plan to record vaccinations and have national level data available[2].

f. An integrated communications and engagement plan focused on seasonal vaccination **[EL/004 - INQ000421395]**.

27. November 2020 was a critical month for further planning of the deployment of the vaccine, as it was the month when it became clear that a successful vaccine was going to arrive. On 9 November Pfizer published their phase 3 data and it became clear that – subject to Medicines and Healthcare products Regulatory Agency ("**MHRA**") approval – a vaccine could be available for deployment within a month **[EL/005 - INQ000421407]**. Oxford AstraZeneca ("**AZ**") were also poised to submit their data to MHRA. Against a backdrop of increasing Covid-19 cases, the October 'circuit-breaker' lockdown, and increasing pressure on the NHS, the delivery of the vaccination programme (if it was possible) became an even greater imperative. The need to move from components to an integrated and 'real world' delivery plan was urgent. It was in this context that I was asked to step in as SRO of the vaccine deployment programme.

28. As SRO my role was to ensure that the vaccine was administered to recipients, taking responsibility from when the vaccine arrived into the country. Where Dame Kate Bingham had set up and led the VTF to create a portfolio of vaccine opportunities and commercial deals to ensure a vaccine was available in the UK as soon as possible, and the VTF played a close role working with the vaccine development organisations to trouble shoot production and manufacturing, my role was now to get that vaccine into arms. I needed to work with a range of stakeholders across government and the

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[1] More information on the development of the booking system is described in the CWS.

[2] More information on plans to capture data on vaccination is set out in the CWS.

NHS, as well as with local stakeholders and with communities. My responsibility was to get vaccine into arms as soon as possible and safely, working to a business plan agreed with government and implemented largely by the NHS. I did not have responsibility for clinical decisions about who would receive the vaccine, I did not make scientific and commercial decisions as to which vaccine to buy and for how much, although later the data and expertise in the delivery programme was used by VTF for subsequent deals.

29. Specifically therefore I took responsibility for successful delivery of the deployment programme:

    a. The short and medium term strategy for vaccine deployment.

    b. The design, contracting and operation of the supply chain from the PHE warehouse to sites where the vaccine would be delivered.

    c. The design, contracting and operation of the vaccine deployment model itself – the three main delivery modes and the specifics within each of them.

    d. The workforce model to deliver the vaccination programme, including the use of volunteers.

    e. The commissioning and delivery of the tech and data solutions that would allow us to monitor the transport of the vaccine, to invite people for vaccination and monitor uptake the design of the tech solutions was undertaken by NHS Digital.

    f. The communications and engagement with the public and with specific recipient groups, designed to ensure good public information and tailored messaging to all individuals and groups to encourage uptake, as well as monitoring public attitudes – although some of this was done in concert with government communications functions.

    g. The effective operation and delivery of the programme itself in terms of governance, staffing, programme timetables and financial management.

    h. Reporting to government and engagement with a range of stakeholders.

30. Although I was engaged on other aspects of making the programme work, there are some critical aspects on which I did not have responsibility. On policy, DHSC was in the lead. On public health advice, some aspects of clinical governance and

management of the 'green book' PHE/the UK Health Security Agency ("**UKHSA**") was in the lead. On providing clinical advice on priority cohorts the Joint Committee on Vaccination and Immunisation ("**JCVI**") was in the lead. On approving the vaccines MHRA was in the lead. On developing, managing and contracting for vaccine supply, as previously stated, VTF remained in the lead. On many decisions about local deployment, local government and the vaccine delivery sites took a lead within the programme framework.

Creating the operating model to deliver the vaccine

31. As noted, the reality of having an administrable vaccine brought new momentum which I was keen to harness, but I was also aware that such energy to make progress could be counterproductive if the right foundations were not in place. In the early weeks we moved to put in place measures that would let us operate and roll out vaccine, at speed.

32. On Wednesday 4 November 2020 Simon Stevens asked me to lead the vaccine programme. Given the importance of the programme to public health and the UK's strategy for managing the pandemic, as well as the imminent arrival of a viable vaccine, plans now needed to quickly turn into delivery. The NHS England Chief Executive wanted someone with experience dealing with complex stakeholder relationships, demonstrable delivery experience and strong analytical and problem-solving skills to put the NHS in the best place to deliver for the public. After reflecting overnight, discussing with my immediate team, with my family and with Amanda Pritchard, the then COO of NHS England, I confirmed on Thursday 5 November that I would take on this role.

33. From that day I started holding meetings with leaders of different parts of the programme and key leaders from partner organisations. For example, over the weekend of 7 and 8 November I held online meetings with individuals who were already playing leadership roles within the programme, as well as key partners such as Ruth Todd and Nick Elliott from the VTF.

34. Over the next week I sought advice from key stakeholders and experts working with and adjacent to the programme. For example from June Raine at the MHRA, from Mary Ramsay in PHE, from DCMO Jonathan Van Tam and CMO Chris Whitty, and from the CEO of Pfizer in the UK, Ben Osborne. I also requested support from the vaccines policy team at DHSC, newly led by Antonia Williams, on specific aspects of

the programme, and tested our approaches with the Vaccine SROs of the devolved administrations ("**DAs**"). I consulted extensively with the VTF team, and with the Pfizer and AZ teams to understand and probe supply and distribution options.

35. I prioritised these meetings with key stakeholders so that I could get up to speed as quickly as possible with where the programme was, what key stakeholders thought was working well and what could be improved.

36. Although I have experience of working with supply chains through my roles in the private sector, I also wanted to rapidly build my knowledge of vaccination programmes. I read assessments of previous international mass vaccination programmes produced by WHO and others, and spoke to others around the globe who were planning their own roll outs, using NHS England's and the wider health family's networks, including meetings set up by FCDO. For example, I found sessions with the French, Singaporean, Canadian and US vaccination teams helpful over the first eight weeks or so of my time as SRO.

37. From Monday 9 November I rearranged my other commitments to focus full time on the programme, delegating aspects of my CCO role including those related to PPE.

38. As I took on the role, I found progress had been made to plan for the deployment phase (as set out earlier in this Statement). Many elements of the programme were in development and needed bringing together to move from a plan to a fully functional service. My assessment was that there were three key challenges to progress to create a fully operational service:

    a. **Novelty.** There was a huge amount of uncertainty, largely derived from the novel nature of the situation. Like many things throughout the pandemic, this was a new virus, a new vaccine, and the first time mass vaccination would be attempted at scale in NHS history. As one novel thing became manageable, a new one emerged. For example, the first data showing the effectiveness of the Pfizer vaccine were published on 9 November. Information had already been shared by Pfizer on vaccine characteristics, so we knew that the vaccine would need to be kept at -70°C but we did not know packaging details (critical for distribution and storage), whether and for how long the vaccine could be held at fridge temperature or room temperature, nor when it would be approved, available, and in what volumes and on what dates. Although the prioritisation of groups to receive vaccine based on morbidity and mortality had been published

as a draft by JCVI in September 2020, the team did not know if this would be the final precise requirement, or if further data would lead to this guidance being revised.

b. **Resource constraints.** The team did not yet have an approved business case from HMT, although the DHSC Second Permanent Secretary – David Williams – was allowing the programme to operate at risk. This made bringing in the right people with the right expertise at the right time difficult. Further, the 'novelty' factors, referred to above, meant we identified need for certain technical roles, such as technical logistic and supply chain specialists. In addition, where existing NHS England staff had the relevant expertise they were frequently already engaged in other critical projects at this point in the pandemic. There were therefore capability and capacity gaps across the team. As I come to later in this Statement, some bold decisions had to be made at speed in this area.

c. **Processes.** The team had multiple stakeholders and significant time was spent updating or seeking input from them. This included DHSC, the VTF (including input from vaccine manufacturers and the supply management team), PHE, Cabinet Office, HMT, No10, Ministry of Housing, Communities & Local Government ("**MHCLG**", later Department for Levelling Up, Housing and Communities ("**DLUHC**")) and NHS England itself, including regional leads who were managing infrastructure set-up locally. The decision-making structures and the authority of the NHS England programme director were unclear, creating a barrier to efficient and timely decision-making.

39. It was clear that my job was to bring the different parts of the plan together and identify how we would together rapidly create a fully functioning operation to ensure we could vaccinate recipients at pace and at scale sometime in the next month.

40. To create the operating model that would support urgent delivery, as well as one that would build capacity and resilience over the next few months, I focused on three immediate tasks:

a. creating a vision and aligning around a clear purpose;

b. building the capability and strengthening the existing team; and

c. creating appropriate governance structures and oversight arrangements to enable the operation to function efficiently and effectively.

Creating a vision and aligning around a clear purpose

41. First, we needed a mechanism to allow the whole team to manage the novelty and complexity of decision-making. I could see we were going to need to make multiple decisions rapidly, utilising expertise from many different specialties, and bringing together people who didn't know each other and had come from very different organisations. We needed to create a common language, a common purpose and a clear set of guiding principles which would allow everyone to make decisions in the interests of delivering the programme's goals and therefore serving the country.

42. Critical to this foundational guiding principles were the three 'C's set out in the report from the World Health Organisation's Strategic Advisory Group of Experts ("**SAGE**"), **[EL/006 - INQ000421361]**. which are:

    a. Confidence – Recognising people's concerns and hesitations about a new vaccine as well as the legitimate negative experiences with major institutions, including the NHS, and some specific histories with trust in pharmaceutical companies for some communities.

    b. Convenience – focusing on how to make it easy to get a vaccination. Considering locations, accessibility (public transport etc.), ease of booking, requirements to enable people to book/access a vaccination (e.g. use of peoples' NHS numbers), opening hours, and so on.

    c. Complacency – how important it was for individuals to receive a vaccine, levels of personal risk vs societal impacts.

43. It was clear from the WHO paper that successful mass vaccination programmes have three core characteristics – simplicity, fairness and operational excellence – that together combat the three Cs barriers and drive vaccine uptake. Together, these learnings, the feedback received from stakeholder and team conversations, my own analysis and the experience of a century of vaccination, were used to develop the deployment programme mission statement and to guide our decision making throughout.

44. To turn all of this background reading and review into something directional, I assembled the leadership team of the programme after one of our evening meetings in the week of 16 November, to talk through the feedback received from stakeholders, the reading I'd done, and to explain why I thought we needed a clear guide for our

decision-making. I then asked each person what they thought we were here to do. Out of that discussion we assembled our mission statement as follows:

> *"We will deliver the maximum available doses of vaccine, with high uptake in priority groups, to minimise morbidity and mortality, safely, and as quickly as possible."*

45. This was printed multiple times and stuck to the wall of every meeting room in our operations centre in Skipton House as well as sent to team members working remotely. It was quoted extensively in decision making, with people often gesturing to the printout which was, in my office, on the wall opposite where I sat and almost opposite the screen we used to view data and to show colleagues joining meetings on Microsoft Teams. It gave clarity and helped create the deployment model. The mission statement made clear that we needed to:

    a. Deliver vaccine as fast as possible – 'vaccines in arms, not in fridges';

    b. Ensure every vaccine centre complied with IPC guidance – 'safely';

    c. Give effect to the JCVI advice on prioritisation to minimise morbidity and mortality;

    d. Limit vaccine wastage to a bare minimum;

    e. Do everything we could to drive high uptake while addressing health inequalities, balancing volume and precision, and all communities needed the access that worked for them; and

    f. Galvanise not just the NHS, but the country to help reach everyone eligible, no matter their initial confidence or complacency.

Building the capability and strengthening the existing team

46. Building on conversations with the existing team and others, I consolidated leadership arrangements and clarified roles and responsibilities for the national and regional leaders. This included the seven Regional Directors of Commissioning ("**RDCs**") who were the nominated leads within each regional team, charged with supporting the delivery of the deployment programme with their integrated care systems ("**ICSs**") and local health delivery systems. They had roles outside the programme as well, so I

spoke to the NHS COO and to the Regional Directors ("**RDs**"), to ensure they supported my sense that the deployment programme needed to be a full-time commitment for the RDCs and that the RDCs would all need teams supporting them, in particular to ensure all local communities were engaged.

47. Next, I asked for help to bring together the specialist technical expertise with this existing capability. I asked for members of the team I had worked with earlier in the pandemic on the PPE response to join including independent supply chain expertise, digital and technical expertise, strategy and modelling teams, for a senior nurse to join the clinical team, for a new lead for the Workforce team, and support from the Ministry of Defence that would support many of these areas, via military aid to the civil authorities from DHSC.

48. We also needed a framework within which teams would be able to make their 'own' rapid decisions whilst ensuring no one was working in isolation. We took the existing team structure and governance and built it out to show how 'channel' teams (Local Vaccination Services ("**LVS**"), vaccination centres, hospital hubs), would need to draw on expert teams such as Supply Chain, Tech and Data, Strategy and planning, Clinical, Equalities, and Access, Comms, and Workforce; and how all those teams needed to connect into the RDCs to ensure local implementation was effective.

49. We adapted the existing team structure where possible so as not to distract from the work that needed to be conducted, but where this was not possible, made a few changes. We changed the daily operating rhythm to make it clearer which meetings were operational 'check ins' and for tasking, and which were decision-making. We also made a clear split in our thinking, and in parts of our team structure, between the work to get ready for December vaccination, and work to create longer term scale and efficiency. We moved to a 7-day-a-week working pattern starting on Wednesday 11 November and confirmed the split of responsibilities so everyone was clear where and how decisions were made.

Creating appropriate governance structures and oversight arrangements to enable the operation to function efficiently and effectively

50. To succeed, the programme needed an effective governance structure to bring together expertise from across the different organisations, avoid unnecessary duplication of oversight and assurance, and, critically, to maximise the time teams had to design and deliver the operation.

51. Although the aspects we were responsible for were clear, the programme I inherited in November had a significant number of assurance and oversight meetings and reporting processes, and it was not always clear what authority those in the programme had to make decisions, or which departments or individuals had to be consulted before decisions were final. The multi-agency nature was reflected in multiple layers of governance which were sometimes overlapping but also repetitive and lacked clarity. This would clearly be a drag on roll out and compromise the NHS's ability to deliver. It was becoming more of an urgent issue given the indications that we could be as little as four weeks away from needing to deliver the first vaccination.

52. By illustration, in my first week, starting on Monday 9 November, I spent 24 hours in governance meetings – reporting separately within NHS England, including to the NHS England board, to DHSC (including SSHSC), to the VTF, to the Cabinet Office Covid 19 taskforce, and to HMT. During November this reporting included meetings with the National Audit Office ("**NAO**"), who were conducting a report on the first phase of the vaccine programme, and with the Infrastructure and Projects Authority ("**IPA**"), who had been sent to do a major projects review of the programme due to Cabinet Office concerns. This was replicated across the teams.

53. Amongst my learnings from the parallel supply chain work on PPE was that clear and effective governance and assurance structures are critical to support clear decision making, to limit time reporting versus doing, and to ensure clear links into critical partner organisations so that decisions which other organisations need to make can be fully informed and the programme as a whole can then operate effectively even across different parts of government. In this instance we needed decisions by VTF, in particular, but also DHSC, PHE and HMT, to be made with purpose, and priorities that, if not the same, were at least aligned. Later this would also apply to MHCLG (and subsequently DLUHC, and to the Department for Education ("**DfE**")). I also saw that effective reporting was an essential part of building confidence in the programme, which would then help with the load of reporting. To address this quickly I asked Andrew Kenworthy, who had previously been part of my team when I was ND TCO, and who had helped on the PPE programme, to join to do a quick review of governance and recommend how we could create both clear accountability and speedy decision-making.

54. The best way to achieve both clear accountability and speedy decision making, while ensuring robust oversight, was to put in place a governance structure and meeting rhythm to streamline governance, aligned to operational rhythms. The meeting

structures and rhythm needed to bring together the teams involved in different aspects of deployment so that everyone was focused on a single set of goals, to deliver our deployment mission.

55. These arrangements are covered in detail in Part Three of the CWS but from an operational perspective, by January 2021, it included a daily 8:00 and 17:15 stand up stand down meeting (9:00 and 16:00 on weekends) to identify key issues and challenges, rapidly identify the tasks needed to resolve them, and ensure streamlined operational decision-making. The morning meeting had a large attendance, and the afternoon one was for SLT only unless a specific issue was being discussed, with RDCs attending on Tuesdays and Thursdays. Separate reporting to separate groups outside of the Vaccination Deployment Programme ("**VDP**") was removed as far as possible, and if people outside the programme needed an update on the programme, I suggested they join the weekly operational board meeting for the programme, which took place on Mondays. The Friday morning stand up meeting was also an inclusive one, with invitations extended to HMT, Cabinet Office, DHSC, SSHSC private office, to the Vaccines Minister and his office, the VTF, and No10 among others. Initially most of those groups would attend both the Monday programme board and the Friday morning programme meeting. Later it stopped being essential for them to attend, as the programme became more predictable, daily data flows to Cabinet Office were established, and weekly reporting to No10 became more stable and well understood.

56. Of course, some separate governance and accountability meetings continued. For example, SSHSC chaired a daily meeting (excluding weekends) which allowed rapid decision-making in DHSC, and the VDP finance team reported monthly to HMT. External reviews such as the NAO and IPA follow ups in 2021 were of course scheduled when requested.

57. We should note that while the programme streamlined reporting and governance meetings in this way, we continued to support and enable joint working and alignment meetings. Some of these meetings are referred to elsewhere in this Statement. For example, the communities and engagement team held weekly sessions with local authority leaders. While we wanted to streamline reporting and governance, it was essential that we continued to draw on expertise outside the day to day teams inside the VDP.

58. I have been asked to comment on a WhatsApp exchange with SSHSC dated 12 November 2020 in which SSHSC made comments about working with regions. At this

point I had been in post for less than two weeks and I had no information suggesting any issues with the involvement of regions within the vaccination deployment programme. I assume that SSHSCs comments were reflective of his experience of working with regions on a range of matters rather than specifically the vaccination programme. I responded that I was keen to work with the regions. They had the local insight, knowledge of local populations, and local relationships, information and connection that was critical to the success of the programme. They also had operational links to their local systems and we subsequently worked extensively with them to maximise take-up of vaccinations among the local populations within their areas as set out later in this Statement. The Regional Directors of Commissioning (RDCs) were, from the beginning, part of my core team to enable close connection and aligned goals.

59. The governance approach set out above enabled me to take control of the decisions we needed to make quickly, allowed DHSC to have specific decision-points to speed up formal sign off on critical issues, and made sure other bodies had a productive way to advise the team and to provide oversight, according to their role.

60. These changes highlighted how important it is, particularly during a major national response that involves multiple agencies, that the authorisation and assurance processes enable day to day delivery, and avoid delays to operational decision making. From my experience, for the delivery of large-scale, national programmes to work successfully, it is essential to have:

    a. Well equipped and trusted SROs – who are prepared to take responsibility for decisions which, almost by definition, will not be perfect but will have been considered against the data available at the time, and will have involved to the greatest extent possible the key stakeholders without delaying decision-making.

    b. Streamlined, well-understood, and robust structures for governance – so that rapid decisions can be made, and officially recorded to support transparency and improvement. This is especially important when considering investment of public monies at speed.

    c. Transparency and processes for embedding learning – for example good record keeping, and regular reviews and improvement of programme processes.

    d. Expertise – the relevant expertise to make the decisions.

Preparing for Day One

61. Aligned around a clear vision and common purpose, supported by additional expertise and an effective governance structure, the next step was to plot a path through November towards likely vaccination deployment in early December **[EL/007 - INQ000421396]**. To do that successfully from Day One, we focused on ensuring the following were in place:

    a. A priority delivery channel. Not all of the vaccination delivery channels would be ready for Day One, but we needed one that would be.

    b. A supply chain. We needed vaccine, consumables and equipment in place. Not every site would have that on Day One, but it was non-negotiable for our priority delivery channel.

    c. A data management system. We needed accurate data from Day One, both for reporting and to ensure we were making sensible operational decisions.

    d. A trained workforce. We needed a trained workforce for Day One with plans in place to expand.

62. This all needed to be underpinned by an effective communications and engagement strategy grounded in actions designed to address confidence, convenience and complacency, alongside plans to ramp up capacity from Day One as safely and as fast as possible.

63. As described earlier in this Statement, the lack of certainty of all aspects of the vaccine characteristics and timing of vaccine readiness was a barrier to bringing the operational plan together. The team had tried to create a 'perfect' deployment model that would protect taxpayer money, rapidly reach very high weekly vaccination rates, reach priority groups, and build an invitation system to invite the right people in the right order. Attempting to meet all these goals without addressing the trade-offs against speed and readiness, had meant the team were not clear what the Day One priority delivery channel would be at this point. I was clear we had to make that decision by Monday 16 November.

64. There was already agreement that there would be three main channels for vaccine delivery: hospital hubs, mass vaccination centres and LVS.

65. At first 37 hospital were identified that had -70°C freezers in which to store vaccine, and one plan had been to use them as onward 'wholesale' locations for distribution to a wider network of vaccination sites in their local area. It became clear during November that first, the onward movement from these hubs would not work due to the restrictions on how many times the Pfizer vaccine could be moved at room temperature before having to defrost it, second, due to the complexity of a three-stage distribution chain and licensing restrictions, and third, because the -70oC freezers were not always in convenient locations adjacent to the hospital itself.

66. The advantage of sites such as hospitals and mass vaccination centres was that they had capacity to vaccinate high volumes. Pfizer had assumed that a scale model would be the most effective, partly due to the numbers needing to be vaccinated and partly due to the challenges of vaccine handling. Consequently their original packaging of the vaccine was in 'pizza boxes' at 975 doses per box. A 'pod' model of staffing and flow through a hospital or vaccination centre had been developed and trialled, showing that each pod could safely handle 540 vaccinations a day. This meant one large vaccination centre could contain multiple pods, depending on space and layout, thereby offering high numbers of vaccination whilst also minimising any vaccine wastage. Initial sites for vaccination centres – one per Clinical Commissioning Group – had been identified and commercial arrangements were being processed.

67. However, it quickly became clear that large scale centres, be they hospitals or mass vaccination centres, would not work as the sole delivery mechanism. Their ability to reach care home residents and care home workers (cohort one), those aged 80 and over, and those working in all health and care settings (cohort two) were severely constrained. Most care homes have fewer than 50 residents, many of whom have mobility problems and are more vulnerable; hospital vaccination was the least convenient option for this group of residents and their carers.

68. As Covid-19 cases were on the rise, there was a risk that hospitals would be perceived as unsafe places for those over 80 to go to, and hospitals had no systematic way of inviting in those aged 80 and over. An invitation system was being designed that would work by age group and allow people to book appointments at vaccination centres, but despite the best efforts of the NHS Digital team, this would not be ready for Day One, instead indications were that this would be live from January 2021.

69. The decision on whether our first focus for initiating sites should be the large vaccination centres became a moot point because we now knew that without the

invitation system in place it was not feasible to operate a safe and effective mass vaccination at these sites. In addition, the commercial and other set up arrangements for mass vaccination sites would not be in place for Day One in more than a handful of locations, and we needed another delivery mechanism that would be accessible to those in all parts of the country.

70. The immediate decision was then whether to focus Day One on deployment through hospital hubs or set up a network through GPs. The GP option would have enabled easier access for the most at-risk patients in cohorts one and two and the use of GP records would have easily allowed people to be identified and invitations prioritised by age.

71. However, due to the known characteristics of the Pfizer vaccine, only hospital hubs were guaranteed to be able to receive vaccines through a secure -70°C supply chain, and to receive and dispense at volume. Any dispensing location would need to be able to use all its 975 doses within 120 hours of receiving the box (and therefore starting the defrost process). As discussed in more detail in the CWS, the team was in the process of establishing commercial arrangements with GPs to dispense in Primary Care Network ("**PCNs**") groupings which would mitigate some of the scale challenges, but to agree these commercial arrangements, build a supply chain that could deliver hundreds of boxes accurately and quickly, onboard hundreds of PCNs[3]. and equip them with the necessary kit, was not a feasible option for Day One. We did not put this option on hold given how attractive it was in terms of accuracy and how essential it was to reach our priority cohorts. Instead, we progressed it at pace, but needed an alternative that we knew could be ready for Day One.

72. There were only two companies in England able to transport medicines at pharmaceutical-grade temperature maintenance. These were Alloga and AAH. Critical to starting operations at the beginning of December was signing contracts with them both. The Cabinet Office approved draft heads of terms and issued a letter of intent on 10 November 2020. This meant detailed contracting could be completed so that we

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[3] PCNs are groupings of GP practices each covering populations of approximately 30,000 to 50,000 which had been established since 2019 to encourage GP practices to work more closely together and develop partnerships with a range of local health and social care providers with a view to offering more personalised, co-ordinated health and social care to their local populations

could be ready to safely transport vaccine to locations to vaccinate from 8 December, and then to local vaccination sites as soon as these could be set up.

73. To enable the GP option to be at all viable, and to ramp up capacity quickly and safely, we needed two things to be in place on top of a contractual agreement: an operational supply chain and groupings of GPs to give scale to vaccination and limit the complexity of the supply chain. While the supply and logistics team worked on the former, the primary care team within NHS England worked on the latter, settling on a model that relied on the existing PCNs.

74. The team had received indications from Pfizer that they were conducting studies to establish whether the vaccine could be safely transported at fridge temperature. This would have enabled distribution within the pharmaceutical-quality level supply chain and might have allowed breaking up 'pizza boxes' to smaller lots that GPs could manage. However, we were aware that it would have taken weeks to implement those changes, and that the breakdown/repack process would have had to be first assured by the MHRA. With only three weeks to go, it was clear that there was no time to have multiple options. We needed a guaranteed vaccination plan for Day One, while maintaining a focus on scaling up over the following days and weeks.

75. In due course, confirmation was received on 2 December when MHRA published approval of the transport of the Pfizer vaccine at fridge temperatures in no more than 2 journeys. They confirmed that the vaccine could be held defrosted for 120 hours at fridge temperature with no deterioration in performance. This change meant that we could proceed at pace with the plan to break down the 975 doses in each pizza box, re-packing in smaller sets and distributing to sites, so that there was less pressure on small PCNs to be able to deliver 975 doses in 5 days. It also meant we could start vaccinating cohort one (those living and working in care homes) by re-packing vaccine doses into reasonable sizes for vaccination to proceed on site at care homes.

76. To cut through these challenges and ensure clarity about the approach needed for Day One that the team could mobilise around, I set up a workshop that was facilitated by the NHS England strategy team. The purpose of the workshops was to create and then use a decision-tree to get to at least one viable option that could adhere to the constraints we were operating with and still be ready to vaccinate on Day One. This was held on Saturday 14 November **[EL/008 - INQ000421364]**. The aim was to stress test options that would:

a. enable vaccination of individuals in priority cohorts (one and/or two);

b. be suitable for the safe transport of the Pfizer vaccine to the relevant location; and

c. be achievable in the time available.

77. We used a decision tree to work this through and put together a 'guaranteed' option for Day One. The agreed Day One option was to start vaccinating health care workers (cohort two (b)) in hospitals while we continued to work on the logistical arrangements that would allow us to rapidly expand the vaccination programme to care home residents (cohort one) and those over 80 years of age (cohort two) **[EL/009 - INQ000421389]**. This approach would have enabled us to move the vaccine, utilise the vaccine volumes, and safely vaccinate the intended group without needing to set up a new system for calling people for their vaccine or having to find means to move vulnerable care home residents which we had been advised was not clinically safe or advisable. This would have made the initial focus of the deployment campaign focused on vaccinating JCVI cohort two, not cohort one, because we knew we could reach them and use up our available vaccine. This proposal was discussed with stakeholders and accepted as a compromise position pending more detail on transport conditions and volumes of vaccine available.

78. For the next two weeks, our Day One operational plans focused on getting everything in place to operationalise vaccinations within hospital hubs, and ensuring each site had a plan for vaccinating their staff. We wrote to Trusts on 20 November 2020 to specify that Trusts also needed a plan to vaccinate their own staff as well as other NHS staff **[EL/010 - INQ000414403]**. In the background we continued the work to negotiate contractual arrangements to vaccinate via GPs, build the IT systems required, and to contract and equip the proposed large vaccination centres so that our capacity and offering would grow from December in anticipation of increased supply from January onwards, given signals were that the AZ vaccine was also likely to be approved in the next few weeks.

79. We were therefore splitting our focus between ensuring that we could go live as soon as the vaccine was available to us and working to maximise the availability of the right capacity for the right cohorts over the subsequent days and months. In doing so we were planning such that our vaccination capacity would always be greater than the supply of vaccine so that capacity was never a constraint on vaccination. We made

use of the 'maximum' capacity calculations that had been developed earlier in the autumn, before I joined the programme **[EL/011 - INQ000421399]**.

80. During the last week of November it became clear that the Pfizer vaccine was close to being approved. Negotiations with Pfizer about volumes they could make available to the UK were conducted by the VTF. I was invited to join these discussions to make sure we knew how much we would be able to deploy. Full vaccination required two doses to be delivered. Initially Pfizer was approved on the basis of doses being given 21 days apart, and 28 days apart for the AZ vaccine when it was approved on 30 December.

81. The terms of MHRA approval of the Pfizer vaccine required us to have sufficient doses to guarantee second doses for all those who had had a first dose **[EL/012 - INQ000421366]**. We therefore had to plan to use approximately half of the doses provided in December for first doses and half for second doses. We could not assume we would be able to deliver precisely the same number of doses as we received, as we had to assume some would be wasted (e.g. through a vial being dropped, or there not being sufficient people available to receive all doses of vaccine available once a box or vial had been defrosted).4

82. The logistics of second doses were more complex. To administer first doses, sites' focus was on ensuring sufficient people in the right cohort available to receive the doses they had available. For the second dose, it was more complex as they had to have eligible people – those who had received their first dose the appropriate number of days in advance. Sites therefore had to have a plan to recall people for their second doses on the right date, and we had to use data on doses delivered at that site on a particular date to plan shipping of the same number of second doses, plus some allowance for wastage, in time for second dose clinics. Sites did record 'first' and 'second' doses into our data systems, so we were able to track this accurately and contact sites directly when their plans did not seem to correspond to the data provided, for example if they did not seem to have sufficient second dose clinics planned. More detail is provided on logistics below.

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[4] Further detail on wastage assumptions and data is provided in the CWS.

83. Pfizer had informed the VTF that although they would deliver most of their available supply to the UK over the first three weeks of December, we would not then receive any further doses until February 2021 as they had commitments to honour with other countries as those countries were expected to approve the vaccine over the course of December and January. The VTF worked closely with Pfizer to get the best possible deal for the UK, and the MHRA's work to ensure speedy and robust approval allowed Pfizer to 'bank' on the UK as the location that would receive most of what was being successfully produced at their production site in Belgium in these first three weeks of global roll out.

84. Limited supply meant we had to adapt our approach as it became clear that we would not have enough doses in December to even vaccinate all over 80s before January 2021. We held a discussion with the CMO and the devolved nation CMOs, as well as the devolved nations' vaccine leads, on the afternoon of 2 December to discuss how to best prioritise the limited initial supply of Pfizer vaccine **[EL/013 - INQ000421369]**. On the basis of the limited supply, and the lack of certainty around the effects of vaccines on transmission at that stage, the guidance from the CMO was that the priority for the initial roll out to cohort two must be for those over 80 years old (who were at the greatest clinical risk of dying), not healthcare workers. We therefore needed to make another delivery option work.

85. As a consequence, we worked with hospital hubs over the 6 days between 2 and 8 December, to implement their planned operation and ensure that their initial focus was on vaccinating the over 80s. This process started on 2 December with a webinar with NHS Trust CEOs and operations leaders from the initial set of hospital hubs, following on from the afternoon meeting with CMOs that day.

86. In parallel, recognising that GPs were in a better position than hospital hubs to offer the best possible vaccination experience to over 80s, we turbo-charged the approvals, and focused on equipping the GP-led PCNs to get the first tranche ready to vaccinate in mid-December. Therefore, it was clear that Day One delivery was hospital hubs, with a plan to open PCN capacity for vaccination of the over 80s as soon as possible.

87. To finalise the Day One plan, daily sessions with the COOs of the first 50 hospital trusts between 2 and 8 December, were used to devise and share innovative solutions to identify and invite those aged 80 years or older into hospital to be vaccinated. These hospitals worked at pace to amend plans so they could deliver the vaccine to the right

cohort – some created new booking systems, others partnered with GP practices across their catchment area to identify and call eligible people.

88. We worked with hospital hubs to make sure workforce readiness adhered to legal and professional training requirements from Day One. Given the novel nature of the Pfizer vaccine, hospitals were well placed to ensure effective handling of the vaccine by bringing together pharmacy specialist medicines handling and preparation expertise and trained vaccinators to deliver doses.

89. Finally, for Day One readiness we knew sophisticated data management and capture and flow systems would not be ready and worked with hospital hubs to put workarounds in place to support operational delivery. At this point, we could record a vaccination event into the National Immunisation and Vaccination System ("**NIVS**") which is a digital platform for capturing COVID and Flu vaccination information for both patients and health and social care workers within hospital hubs and vaccination centres. It was installed on hospital IT systems, but there were limitations in how we could flow the data to understand the number of people vaccinated at a local, regional and national level to support performance, supply management and disease understanding. Nevertheless, NIVS allowed those first vaccination events to be safely recorded and linked to patient GP records within 24 hours, as mandated in the MHRA approval of the vaccine.

90. It was clear that together, some of these elements would be rate limiting factors and that this was not an 'at scale' solution but it allowed us to start vaccinating our most vulnerable from Day One.

91. We worked closely with the DAs to ensure all four countries began vaccinating on the same day and on the 8 December at 6:31am, Margaret Keenan became the first recipient of a Covid-19 vaccine outside of a clinical trial, anywhere in the world.

92. In England, 38 hospitals began vaccinating on this day with another 12 hospital hubs starting the following day.

Scaling the operation

93. Alongside preparing for delivery of Day One, we also continued planning to rapidly build the infrastructure to deliver the programme. To quickly open more sites and ensure maximum convenience across the country, we scaled the data and tech

infrastructure, expanded the supply chain operation, and increased the workforce, including volunteers.

Opening additional capacity

94. On the afternoon of 8 December we held a capacity committee to sign off the set of GPs that would start vaccinating on 15 December, review the GP cohort who would start on 22 December, and made sure that the vaccination centres due to launch in January were proceeding at pace. At the capacity committee RDCs would bring their proposed sites for GP openings and vaccination centres, with readiness assessments. We were at the time focused on ensuring access for everyone across England with as little travel time as possible. Our calculations were made in terms primarily of distance that people would have to travel to receive a vaccination, but also included travel time and accessibility via public transport using 101 Log's' mapping and logistics tools. The December focus was very much on building total capacity, and by mid-January we were able to transition to more nuanced discussions on coverage including indices of deprivation. In early December for example on PCN sign up, we prioritised those who were ready to deliver. Once we had launched the first two cohorts of PCNs on 15 and 22 December we and the RDCs started to include engagement for PCNs who were more hesitant to ensure equality of access via GPs nationally.

95. On 8 December, two incidents were reported through the MHRA yellow card system of recipients having adverse reactions to vaccination. A meeting was convened later that evening with the CMO, the MHRA, DHSC and NHS England to discuss the incidents. The conclusion from that meeting was that the events were specific to those individuals and that it was safe to proceed but that sites should institute a 15 minute observation period post vaccination to reduce the risk that recipients would experience an allergic reaction on their way home.

96. A meeting was put in place with all vaccinating locations at 07:30 on the morning of 9 December to share the information and clinical guidance on mitigating any future incidents, which was the addition of the 15 minute observation post vaccination that then became standard practice. On this call the MHRA reinforced the importance for all incidents to be reported via the 'yellow card' system to make sure that clinicians could review incidents against nationwide data to ensure patient safety. It should be noted that the 15 minute observation implied an immediate change to the layout, potential throughput and staffing of all our deployment models as sites now needed

space for people to wait for 15 minutes post vaccination taking account of social distancing rules in place at that time. That same day, MHRA published guidance on managing allergic reactions **[EL/014 - INQ000421371]** and NHS England issued a Standard Operating Procedure for clinical incidents and queries **[EL/015 - INQ000421370]**.

97. To meet the needs of the vaccination programme, it was necessary to train and utilise healthcare workers in addition to those with previous experience in administering vaccinations. The DHSC introduced time limited amendments to the Human Medicines Regulations 2012 with a view to enabling the use of an extended workforce to legally and safely administer a Covid-19 vaccine as long as the administration of the vaccine were conducted in accordance with the requirements of a national protocol approved by the Secretary of State.

98. The national protocol (we have provided version 6 dated 20 November 2021 **[EL/081 INQ000486279]** which explains the changes made since the first protocol was issued on 17 December 2020) contained sections on the identification and management of adverse reactions and the reporting procedure for adverse reactions. The national protocol explained the nature of adverse reactions, indicating that individuals being vaccinated should be provided with the leaflet "What to expect after your COVID-19 vaccination". It also stated that suspected adverse reactions should be reported via the Coronavirus Yellow Card scheme, documented in the individual's vaccination record and that their GP should be informed. It also provided a link to the relevant chapter in the Green Book providing further details on clinical features of reactions. Chapter 14a of the Green Book [first version dated December 2020 **[EL/075 INQ000354471]** detailed the approach to be taken to administration taking into account existing conditions of individuals and reiterated the need for observing those just vaccinated for any immediate reactions including the recommendation for 15 minutes of observation/monitoring. It also referred to reporting of adverse events via the Yellow Card scheme.

99. It was essential that a comprehensive training programme and appropriate competency assessments be in place to ensure 'new' vaccinators could safely administer to patients under the clinical supervision of an experienced healthcare professional. This training included how to deal with possible adverse reactions to a vaccine. PHE worked with HEE to design content for, and deliver, training for each workforce group relating to vaccinations, including those involved in administration. Training was facilitated by e-learning modules.

100. NHS England's contract documentation with GPs **[EL/077 INQ000329490]** and pharmacy vaccination sites **[EL/076 INQ000486275]** contained provisions focusing on appropriate training of vaccinators. Vaccination sites were expected to keep records of training and ensure that vaccinator completed the e-learning training modules, have training on recognising and treating anaphylaxis (a side effect noted in the Green Book and national protocol) and vaccinating in accordance with the most up to date clinical knowledge including the relevant patient group directions and national protocol including reporting adverse reactions via the Yellow Card Scheme.

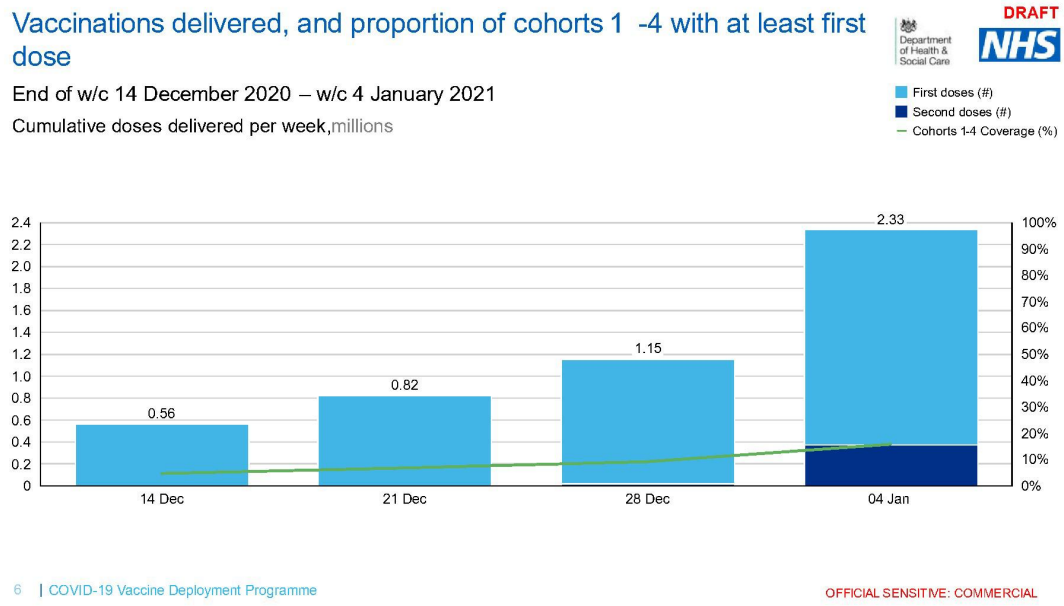
101. I have been asked to comment on whether NHS staff more widely (not those delivering vaccinations) were provided with training to assist in recognising side effects of vaccines. This was outside my area but I understand that the recognition of side effects of medication is a responsibility of all clinicians who have contact with patients, this includes those which are new to medicine. It forms part of their core clinical training, as such it was not felt that there was need for specific training for those who were not involved in vaccination. The known side effects when using a novel therapy such as a vaccine will be those identified in clinical trials which tend to be short lived and relatively minor, and the very rare but serious conditions known to be associated with this class of medicine such as anaphylaxis. Consequently, all vaccinators received additional training in the recognition and management of anaphylaxis, this will have included a large proportion of the General Practitioners and their staff. Hospital staff who were not vaccinating, particularly those working in Emergency Departments deal with rare allergic reactions and uncommon severe illness presentations as part of their core work so are already skilled at identifying and managing those conditions. No additional training was therefore considered appropriate specific to vaccines. When clinicians recognise an event that they feel may be a side effect of medication they are professionally expected to report their concerns to the MHRA using the Yellow Card system. We reinforced the importance of the yellow card system regularly in our communications and engagement, as did DHSC, PHE and MHRA itself.

102. On the evening of 10 December we held two webinars – one for the second tranche of hospital hubs, and one for the launch of the GP-led LVS. These webinars focused on ensuring any questions they had were answered in advance of them starting to vaccinate.

103. On 15 December the first PCNs started vaccinating. This immediately shifted our capacity from around 12,000 doses a day to between 60,000 and 80,000 a day. And

from there we rapidly ramped up capacity, each week, such that by the week commencing 4 January we had delivered over a million vaccines.

Figure 1: Vaccinations delivered and proportion of cohorts one to four with at least first dose



104. Recognising the urgency to vaccinate care home residents and their carers, a pilot was established to ensure that this could be delivered, without compromising the safety of residents or the licensing and transportation regulations on vaccine movement **[EL/016 - INQ000421372]**. The detailed planning required to deliver safely to care homes was conducted in parallel with the scale development of the whole network. This included a pilot phase to ensure safety and efficiency, which ran from 16 December. Following the successful pilot phase, the model for care home vaccination was communicated to the system on 20 December, to confirm that all care home residents and staff needed to be vaccinated using a roving model **[EL/017 - INQ000329393]** **[EL/018 - INQ000414415]**. GP practices were asked to identify workforce that could support the delivery of care home work and additional funding was made available to support this. The operational rollout started on 21 December and further detail is provided in the CWS.

105. Throughout December we continued to rapidly build on capacity, to ensure that we were ready for the approval of the AZ vaccine which was expected by early January. We needed to ensure we had the right delivery channels in the right places, to ensure

an accessible and convenient offer for those in our priority cohorts. As we worked towards building additional capacity, the agility we had designed into our operations became critical, especially as the timing interval between first and second doses was changed on 30 December 2020.

106. We received notification in the week of 28 December 2020 from MHRA that the approval of the AZ vaccine was imminent. Approval was published on 30 December and on 4 January we launched more LVS sites to deliver first doses with this additional supply. The AZ vaccine came in smaller pack sizes (80 dose packs) and was able to be transported at fridge temperature and so was easier to transport to and use at smaller sites, to support the vaccination of care home residents, as well as those who are housebound. It immediately gave us more flexibility as well as more supply.

Increasing the vaccination workforce

107. To support the expansion in capacity and growing number of vaccination sites, we needed to ensure we had sufficient workforce to support delivery. Building on workforce deployment approaches from earlier in the pandemic, local NHS ICSs took the lead in recruiting the workforce needed in their area.

108. To support local delivery, a recommended workforce model and a pod model were developed during the autumn which set out a proposed approach to support safe yet maximum throughput for vaccination clinics **[EL/019 - INQ000421367]**. This was supported by national training materials and guidance. The NHS's ability to scale the workforce quickly, at the same time as maintaining core and pandemic response services, was made possible by changes to the Human Medicines Regulations (2012) that allowed non-traditional healthcare professionals and others to administer vaccines after comprehensive training.

109. Two strategic relationships were established with voluntary partnership organisations to expand the workforce to support vaccine deployment. Volunteer vaccinators from St John Ambulance bolstered local workforce across the country and the NHS Responder Programme, provided by the Royal Voluntary Service, mobilised an army of volunteer stewards to help with way finding and support to the local vaccination teams. Both partnerships attracted significant expressions of interest from the beginning, and this was alongside local volunteers that supported their GP or pharmacy led vaccination centres and pop up or mobile clinics. Volunteers across the country were critical to the success of the programme. A subsequent NHS England Volunteering Taskforce report

noted that 750,000 people signed up to the NHS Responder Programme within four days of the PM's call to action, 400,000 of whom subsequently actively participated.

Creating the data and tech infrastructure

110. Three teams within the programme worked to develop and deliver the data and tech infrastructure to support safe and effective vaccine deployment:

    a. A tech team developed and ran the technical systems that delivered key aspects of the programme (including contracting where necessary). For example they led the decision-making on how to record vaccine events; they designed, implemented, and ran the vaccine booking system and invitation system.

    b. The 'data' team analysed our data and developed the front-end systems to allow better insight and decision-making.

    c. The modelling team calculated the scenarios for vaccine delivery under various conditions and assumptions about uptake, capacity, and model of delivery.

111. In November 2020, I set out my aspirations with our tech and data teams for the data we would gather and use. This included knowing where every vial of vaccine was from the time it left the PHE warehouse until it went into someone's arm. My guiding tagline, as mentioned above, was "we are building a medium-sized supermarket chain and transporting gold" (it turned out later that our supply chain at least was much more complex and responsive than that of a large supermarket chain). We needed to understand who was being vaccinated and where to ensure their medical record contained the right information. This also helped us understand performance and see what each site was doing, how attractive sites were to different parts of the population, and identify gaps in our offer and/or our operations, adjusting accordingly.

112. Before we started vaccinating, we needed to establish data flows to gather information. NHS data is held in different databases and systems. The foundational demographic data that is associated with an individual's NHS Number is held in a database called PDS. There are also fields in PDS for ethnicity, but this is inconsistently completed by GPs, who maintain the data in PDS. Clinical information about an individual is held in systems that are chosen by GPs from a range of providers including Pinnacle. This information is held via clinical SNOMED codes which specify conditions that have been identified for that individual. In addition, these clinical databases contain information on medication.

113. The primary cohorting by JCVI to identify those most likely to benefit from vaccination were based on age, which is information held in PDS, and occupation (health and care workers), which is not. Later cohorts also included those living with specific conditions that put them at risk, which was information that would have to be implied from a scan of SNOMED codes.

114. Inviting the 'right' cohorts was a primary concern, given limited vaccine supply and the criticality of ensuring the programme was perceived as fair, simple, and operationally excellent. We therefore needed a 'minimum viable product' that could invite by age as well as a development of that product that could invite based on specific non-age-related cohorts. We needed a method to record vaccination events and ensure they were entered into the GP record within 24 hours of vaccination (as specified by the MHRA). Plus, we needed a database to hold the information about what vaccine had been delivered when to which individual, so that we could ensure that individual would be invited to receive a second vaccine at the right time. We then wanted to be able to use all that data to track, report on and improve our performance. To do that we also needed to be able to track ethnicity, and we needed our front end databases to only hold anonymised data so that we protected confidentiality.

115. We considered multiple ways of recording vaccination events and by the end of November had decided to use two existing front ends – Pinnacle and NIVS – consolidated into one single data store. Initially the tech team had considered developing a tailored front end that would have been used across all Covid-19 vaccination sites, but a feasibility analysis soon showed that leveraging existing systems would be quicker, more likely to be accurate and would be ready sooner.

116. One of the two data collection systems (NIVS) flowed data straight to us, while the other sent data to our systems overnight. These data recording systems were already installed on the relevant computers so allowed us to rapidly onboard vaccination sites rather than having to agree, install and train users on new software. The technology team did a detailed review of all the options for LVS sites given the GPs we consulted were not initially convinced that Pinnacle was the right answer as although it was installed on GP systems it was not regularly used by many, but a full appraisal of the options showed that Pinnacle was the best option, allowing us to get started quickly and with a robust link to both patient record and the national vaccine data store – NIMS.

117. We reviewed the data on vaccination events ("**Validated vaccine events**") from the day before at our morning operational meeting and used synthesis from this data to pick up local issues with regional leads. For example, one site wasn't recording as many vaccinations as expected given the supply they had had. A regional lead went to the site and discovered they had a short-term problem with administrative capacity. We gave them support to input any outstanding vaccination events.

118. We used data insights to drive overall decision making – for example we noted that vaccination centres in some areas were regularly not fully booked and encouraged them to move to walk in appointments, supported by national and local communications and media, to ensure their capacity was maximised. The data was also used for reporting, including the regular weekly reporting to the public, NHS England, and of course the PM.

119. The modelling team was critical to developing the overall strategy for vaccination. In the early stages, the team ran various scenarios to see how quickly we could vaccinate every adult in care homes, as well as how much vaccine and capacity we would then have to start vaccinating the 75-79 year old cohort – cohort three **[EL/020 - INQ000421401]**.

120. Work between the data team and the modelling team was essential in January to answer questions about how much vaccine was being distributed to various parts of the country. At various times it was reported that London was not receiving enough vaccine, or that it was receiving too much. In reality, our allocation of first-dose vaccine each week was based on what systems could cope with (how many sites did they have operational), what proportion of the current open cohort was unvaccinated in their area, and whether there would be sufficient vaccine of the type needed to administer second doses **[EL/021 - INQ000421378]**. We were not prepared to enable geographical areas to progress to "unopened" cohorts; the focus was on identifying as much of those eligible cohorts as possible.

121. Fairness was a critical value of the programme. We did not publish data on supplies for security reasons but this generated a sense of unfairness, particularly with local government elected representatives who were understandably keen for their residents to be offered vaccination as quickly as possible. Focused communication and dialogue with these partners on how vaccine allocations worked, including assurances on fairness and equity were well received. The Local Government Association, both chief executive and elected member networks, were critical partners in both informing and

sharing this information. In addition, the Vaccines Minister held regular engagement sessions with MPs so that their questions were answered directly, often with support from our Medical Director for Primary Care, Dr Nikita Kanani.

122. From Day One, our principle of using data to constantly improve our approach was in place. For example, data systems allowed hourly updates on vaccine events which showed some hospital hubs were not vaccinating at the rate expected. A check in with RDCs indicated that our vaccine wastage guidance led to understandable, yet overly risk-averse, use and the shift to prioritise the vaccination of over 80s made flow through the hospital hubs that first week somewhat slower than expected. In addition, some hubs had understood that given they had 120 hours to use the vaccine once it had been defrosted, it was appropriate to take most of that time to use their 975 doses to ensure safety and to minimise wastage. A combination of sharing data and experience from other sites which had faster throughput, as well as increased confidence post week one, meant that most hospital hubs sped up throughput quickly over December, with innovations including taking vaccine onto wards to vaccinate staff to ensure no wastage.

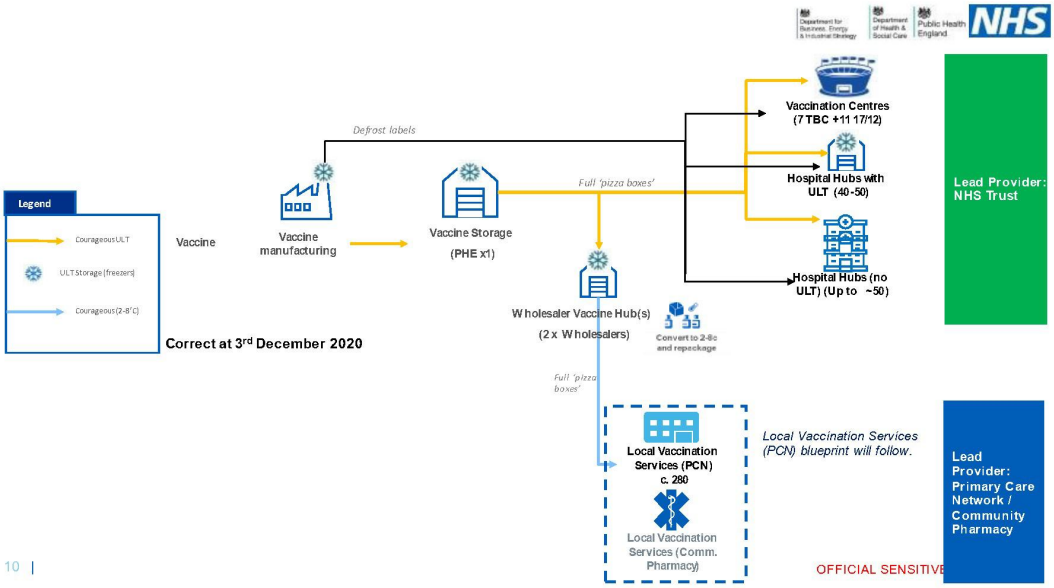
123. The data was also used nationally, regionally and locally to understand if clinics were in the right place when compared to the local unvaccinated population. Where access in terms of geography, physical location or opening times (evening and weekend) appeared to be an issue, pop up or mobile clinics were stood up by local providers as detailed further below.

124. Further development of the vaccine invitation system is given below and in the CWS.

Expanding the supply chain for vaccine, equipment and consumables

125. NHS England was responsible for moving vaccine from the PHE managed warehouses to its onward locations – see Figure 2. We were also responsible for sourcing all associated equipment and consumables required to safely and effectively run a vaccination clinic. This ranged from PPE and syringes, to signage and chairs and pens. A typical LVS would be supplied with over 22,000 items in order to get it into service, likewise a hospital hub would need over 30,000 items whereas a vaccination centre's needs would vary with the number of pods on site, ranging between 35,000 to over 75,000 items.

Figure 2: Proposed movement of vaccines



126. To plan the vaccine deliveries to sites, we relied on accurate forecasts provided by manufacturers to VTF, who then calculated the share across the four nations, and informed our supply team of the allocations. Initially this information was only available very close to in-country arrival of the vaccine. The operations became much easier to plan once the global volume of supply increased and deliveries to the UK became more routine. This happened around March 2021 and again in the winter of 2021.

127. Once Pfizer had published the data on transporting defrosted vaccine, we were able to work with the two Specialist Pharmaceutical Logistics ("**SPL**") suppliers to get the necessary WDA (Wholesaler Distributions Authorisations) from the MHRA – Alloga and AAH as described earlier. This was essential to allow the SPLs to handle the frozen medicines and apply the 'packdown' protocol to defrost and subdivide the pizza boxes into smaller packs which could be used more easily by PCNs or smaller sites. This licensing transformed the number of sites that could use vaccine. Initially the SPLs packed down into boxes of 90, and later also to 30.

128. Hospital hubs and vaccination centres were able to order their vaccine directly from the PHE warehouse via the standard vaccination ordering system ImmForm. Hospitals were not used to doing this and vaccination centres were newly set up, so this occasionally caused issues needing urgent intervention. Most common problems were when hubs didn't order in time and then ran out, when their allocation didn't match

their throughput, and when, in the initial December period, the PHE team was unable to dispatch over the weekend. All these problems were taken on board, some were solved through emergency interventions, and the system was improved, for example by moving to 7 day operations at the PHE warehouse.

129. As we grew the number of vaccine sites, the planning for and communication of vaccine delivery became more complex and challenging. Work was ongoing to constantly improve this process to allow sites, particularly LVS sites, to better plan and schedule clinics in advance. By the summer of 2021 we were running a supply chain with the ability to deliver to around 3500 sites weekly within an allotted delivery window within a day. This scale of operation was one with more complexity and greater scale than even that operated by Tesco which was previously the most complex in the UK.

130. To create this supply chain, we needed to work with commercial organisations, and we were reliant on the logistical expertise from the military and from the supply chain experts we brought in. We needed to build these supply chains from scratch during the pandemic due to the unprecedented needs created, and due to previously low levels of investment by UK Governments in technology and infrastructure across the NHS. Retaining and understanding what it takes to scale up supply and logistics operations is critical to our ability to respond in future.

Adapting the response

131. During the vaccination programme we had to adapt many times to changes in understanding, clinical guidance, manufacturer approaches, and supply challenges – as distinct from changes we chose to make to improve our approach based on feedback or data. The first of these clinical changes occurred almost immediately. As GPs started vaccinating on 15 December, we started to get feedback that vials could produce six doses of vaccine rather than five. We checked with Pfizer, and with MHRA to see what guidance should be provided to sites on this sixth dose. Pfizer's feedback was that this dose did exist and could be used, and didn't represent sites inadvertently under-dosing the prescribed five doses. Without a decision from MHRA we couldn't mandate this, but on a webinar on 17 December, our clinical lead Dr Nikki Kanani thanked vaccinators for their feedback and indicated that it was clinically appropriate to dispense this dose. MHRA formally recognised the possibility to extract a sixth dose per vial (when using low dead-volume syringes and/or needles) on 24 December **[EL/022 - INQ000421386]** and shortly afterwards Pfizer changed their shipping (and commercial) position to indicate that each vial now contained six doses, and each

'pizza box' therefore contained 1170 doses rather than 975. The first shipment of labelled six dose vials arrived in to UKHSA on the 19 January and into the SPLs on the 21 January 2021 for onward delivery to sites. Building this into our data systems was complex as it affected how we calculated allocations as well as wastage.

132. The data Pfizer had published on 10 December indicated that much of the immune response generated by the vaccine was achieved by the first dose **[EL/023 - INQ000421387]**. This meant that there was an opportunity to give the second dose later, at 12 weeks after the first dose, and still achieve full immunity for all individuals, while also being able to give more individuals their first dose to make the most of limited supply.

133. The data was scrutinised by the four nations' CMOs, by MHRA, the JCVI and PHE as well as others, and the VDP were consulted as to the implications for the programme **[EL/024 - INQ000305157] [EL/025 - INQ000203969].** The decision to move to a 12-week dose cycle both for the Pfizer vaccine and for the AZ vaccine, which was about to launch, was taken over a 36-hour period from Monday 28 December, including in meetings I attended. It was a clinical decision that we then had to implement. The implications were substantial. For example:

    a. GPs and hospitals who had already delivered first doses from 8 and 15 December respectively had proactively booked individuals to come back for their second dose after three weeks, which meant second doses were scheduled to start on 29 December. We had to find a way to help both sets of sites rapidly cancel and reschedule those second dose appointments while ensuring they had sufficient people attending to use all the vaccine available.

    b. We immediately had to replan our supply allocations. Rather than precise allocations of the remaining Pfizer doses, all of which at the time were earmarked for second dose clinics, we could send vaccines to new sites as well as existing ones for additional first dose appointments. This meant we had to rapidly work through new vaccine allocations and how to direct the additional first doses to sites which still had large numbers of outstanding potential recipients in cohort two. This meant that our programme specialists had to evolve the ordering and allocation methodology and generate a partial pull model for sites, to be able to draw down second dose requirements, whilst still maintaining strict cohort administration.

c. The national invitation and booking system had been set up to make both appointments when a person logged in to book their first appointment, to ensure people would have their second dose on time. We needed to reprogramme it and sites needed to upload available appointments many more weeks in advance than they had been planning. The system was not yet open to the public but was operational, and so this required the team to adjust the rules by which the system worked.

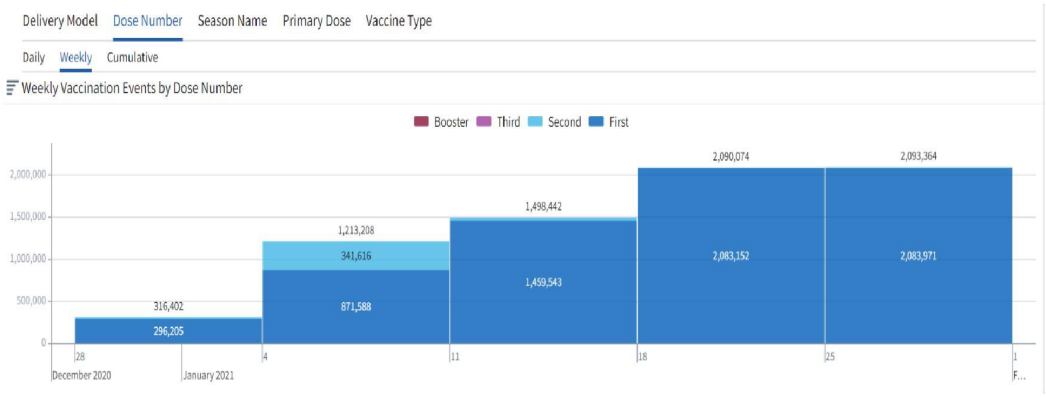
d. The change also had implications for the workforce model and scheduling at vaccination sites, specifically re-profiling rosters to meet the new phasing of vaccine administration.

e. We had to ensure that the communication of the change would not reduce people's confidence that this was a safe vaccine, with defined clinical data backing up the delivery approach. There was a risk that people would see such a rapid change as a sign that the manufacturers, or the programme, or the government, did not have a clear plan and were making decisions separate to clinical expertise. We therefore carefully planned a series of communication and engagement sessions between clinical leaders and those running vaccination sites.

134. The announcement of the change in timing of second doses was given on the same day as the AZ approval which is discussed below. We wrote to systems to explain the decision and to lay out the operational approach to implementing it, and held a webinar on 31 December, led by clinical leads, so that systems could ask technical questions and build their confidence in the decision **[EL/026 - INQ000329415].** We offered to cover the costs of administrators' time rebooking appointments, recognising that temporary additional resources might be needed as teams were already working flat out **[EL/027 - INQ000329421].**

135. Most vaccination sites changed their approach from Monday 4 January, but we could see from the daily data that some locations continued to give second doses that week, even accounting for local discretion.

Figure 3: Weekly vaccination events by dose number



136. To reinforce the importance of implementing immediate changes to the scheduling of second doses, we brought together vaccination providers on Sunday 10 January to share the latest data. Clinical leaders including DCMO Jonathan van Tam and Professor Wei Shen Lim (the chair of JCVI) communicated the clinical imperative to provide as many people as possible with their first dose. Over the next few days we saw the number of recorded second doses drop to less than 1% of first doses, representing an 'allowable' variation in policy as sites indicated they were using judgement to give second doses rather than waste vaccine, or, in some cases, because elderly patients arrived for appointments and it was considered safer for them to then receive their second dose than to turn them away.

137. Although the approval for the AZ vaccine was on the basis of a second dose after four weeks, we were able to launch it at the same time as the timing change was announced for the Pfizer vaccine, so second doses for AZ were planned from the start of the launch as being given 12 weeks after the first. Having the same dosing interval from the start of the roll out for AZ meant that operationally it was simpler for the operation, and was easier to communicate to the public.

Building confidence in the deployment programme

138. One of our challenges during December was to build confidence in the NHS's ability to deliver its plan. The series of changes to policy and practice in short succession outlined in the paragraphs above demanded focused, continuous and clear communication with NHS providers to help them make the required logistical and operational changes on the frontline and keep them up-to-date with an ever evolving landscape. There was much speculation in the press that we were going too slow but

of course they could not see what we were juggling: the holding back of supply for second doses, the structured ramp up of LVS sites and the time taken to pilot and approve a safe and effective approach to delivering the Pfizer vaccine to care home residents all meant we were supporting sites to vaccinate as fast as possible, and safely. This speculation led to a negative environment where various articles were published saying that the NHS was not capable of delivering. Greater pressure was added to this already negative environment as other countries were starting to vaccinate, and vaccine manufacturers started to brief the media about the number of doses delivered to the UK. All of this engendered a challenging environment in our meetings with the PM, held at least weekly from 15 December 2020 onwards.

139. It was hard to convey the complexities of the supply chain, the gap between vaccines arriving in the country and going into someone's arm, the need for clinically robust processes at point of delivery to ensure safety, and that we were still ramping up to full capacity. To go faster there would be trade-offs to be made about the prioritisation of volume versus precision. To increase volume we would have needed to redeploy vaccines into high throughput centres which would have meant deprioritising our focus on care home residents and those aged 80 and older, some of whom were housebound. To illustrate, one GP could visit approximately three care homes a day, each of which might have on average 30 eligible adults, while some PCNs were able to use all 1170 doses of Pfizer vaccine in under two days of on-site clinics. In addition, care homes could not be visited if there were cases of Covid-19 there, and cases were on the rise. To stick to our core purpose as a programme, we needed to be focused on minimising morbidity and mortality (which meant cohorts one and two) as well as to go as fast as possible. We thought we were making the right trade offs, but many in the media and other observers appeared to disagree.

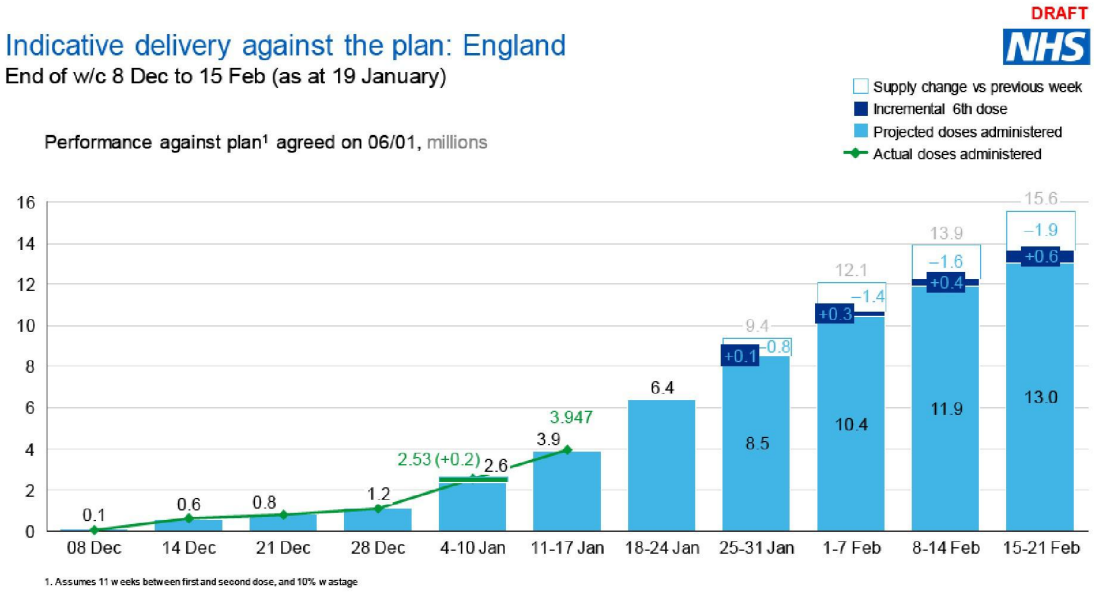
140. To build public confidence, there was a consensus within Government that we needed to publish daily vaccination data to show that progress was being made. At the beginning of the programme I had opposed publishing daily data until we were confident that the new system, pulling data from different databases each night, was robust and that published data would not have to be revised. I did not want data revisions as these would (I was sure) reduce public confidence in the execution of the programme, and we knew that excellent execution was key to building public confidence in the vaccine itself. After six weeks of daily reviews of the data we were confident that the systems were working well, and, perhaps more importantly, flagged immediately when there were problems (for example with data upload overnight). As

we were confident in our ability to report accurate data, we began to publish vaccination data daily from Monday 11 January, to supplement the weekly reports we were already – and continued – publishing.

141. To ensure the rollout was going as fast as possible, we also reviewed our modelling and plans again against our supply and capacity to make sure we were being as ambitious as possible.

142. To demonstrate the ambitions of the programme to Government, we also produced regular updates for the PM **[EL/028 - INQ000063193] [EL/029 - INQ000063243]** which showed the expected ramp up in doses delivered from the first week of January through to 15 February, based on the current supply information from VTF, our modelling, and the actual doses recorded into our systems. We used that slide routinely each week to brief Government colleagues (amended as appropriate to reflect material changes in vaccine supply) to show how many doses we had planned to deliver the previous week against the doses actually delivered (for example, in the week commencing 11 January 2021 we delivered 3.947 million doses, in line with the 3.9 million doses we had planned to deliver over that week).

Figure 4: Indicative delivery against the plan



143. All of the detailed operational planning that we had put in place meant that at a meeting with the PM on 6 January, which I attended along with Simon Stevens and Brigadier Phil Prosser from the VDP, we were able to give a detailed account of

deployment, supported by detailed plans for doses delivered mapped against supply, and the plan to ramp up capacity week by week until the end of January, including the go live of vaccination centres and the booking system. We showed what had been achieved on care homes and our plan to go further, faster. We had a plan to deliver and we had the ability to respond to change **[EL/030 - INQ000063164] [EL/031 - INQ000421374]**.

144. The meeting built confidence in the programme across Government and we were increasingly able to have difficult conversations between the programme and senior leaders including the PM without there being any doubt that the NHS would deliver for communities.

145. The next challenge was to agree a public target that would show that we were delivering against a challenging plan. In dialogue with DHSC and No10, we agreed a target that was challenging but which I knew we had the theoretical capacity to deliver. It was to offer the vaccine to everyone in cohorts one to four by 15 February. We carefully chose how we spoke about the target:

    a. 'offer' not 'deliver' – we were reliant on people coming forward;

    b. 'everyone in cohorts one to four' – we were using clinical guidance to prioritise.

146. According to population tables this meant offering the first dose of one of the two approved vaccines to 12 million people. That was not the public target but the media used available data to focus on that number, albeit the public discussion about the number was often muddled between UK population and England population – our focus was obviously the latter.

147. Our plan – based on the key inputs of our modelled ability to deliver (including assumptions about demand), the supply of vaccine, and the capacity of our centres and staffing models – had showed we should be able to deliver that number of doses by the end of the week commencing 15 February. We pulled out all the stops to ensure that we could make an offer to everyone within the eligible cohorts, and when those that qualified did come forward, they could receive a vaccination.

148. We therefore focused on:

    a. Ensuring capacity expanded as planned during January. We rapidly scaled week on week. There were 168 vaccination sites live on 14 December including 52

Hospital Hubs and 116 Local Vaccination Services in England. The government's Vaccines Delivery Plan published on 13 January 2021 committed us to establishing 206 hospital hub sites, around 1200 local vaccination services and 50 dedicated vaccination centres by the end of January. By 5 February we had 1650 sites live consisting of 267 Hospital Hubs, 90 Vaccination Centres and 1293 Local Vaccination Services. Additional community pharmacy and mobile sites also came online in February. We needed to adapt as we went, with some sites able to do more than they'd planned, some sites not getting the volumes they and we had expected, and many requests for new site openings. We tried to support as much of this activity as possible while maintaining a high quality, predictable supply. Simply to set up a new GP surgery for example, required the delivery of c. 22,000 items, so it could not be done overnight.

b. Making it convenient to get a vaccine. We launched the online booking system on 11 January 2021, and by July 2021 we'd already had over 10 million first dose appointments and over 12 million second dose appointments. We used army mapping abilities to move towards our goal that every resident in England was within 10 miles of a vaccination centre. We eventually realised 98% of that ambition as detailed in the NAO report on the programme. We worked with Carnall Farrar to produce an equalities dashboard that showed uptake at the level of lower-tier local authorities against deciles of deprivation and ethnicity. This tool allowed us to challenge local decision-making on where vaccine sites should be developed, which was particularly important in London, where uptake lagged the rest of the country through this period.

c. Ensuring we made the offer convenient for everyone. Through January and beyond we innovated in how we worked with local authorities and local communities to both engage with communities and adjust our approaches so they matched the needs of the population and took steps to reach the underserved groups. We had national communications campaigns as described in the CWS, and engaged content creators from different communities so that they could share information on the appropriate channels, including TikTok, WhatsApp and Twitter. We reached out to communities and accepted offers of help, notably in this period from the Bangladeshi catering organisation, who offered to run vaccination events in their restaurants. With this engagement we saw a sharp rise in uptake in people receiving the vaccine who reported their ethnicity as Bangladeshi. Their uptake (for those over the age of 50 who had

received a first dose) rose from 38% on 14 February 2021 to 74% on 14 March 2021 **[EL/032 - INQ000111080].**

d. We innovated on delivery models. This was often driven locally rather than nationally. For example the first vaccine bus was created in Crawley in early 2021 to drive uptake in the Hindu community. It proved popular and so other areas looked to create or borrow these. It was particularly helpful in setting up temporary access at sites convenient for communities with lower uptake – for example one bus visited the local Gurudwara. In Devon the local system already had tailored their delivery models to meet the needs of those living on barges, and they set up a floating vaccination clinic.

e. We worked closely with community leaders and organisations to build confidence in communities. We developed a network of trusted voices to help deliver vaccine messaging and instil vaccine confidence in their communities. We called on faith and community leaders, celebrities and NHS clinicians and we delivered vaccinations in familiar community settings including places of worship such as mosques, churches and cathedrals, and synagogues.

f. Increasing access as well as working with community leaders and locally. We used broadcast messaging to ensure everyone understood the offer. The health secretary made an announcement on 8 February asking everyone in cohorts one to four who had not had a vaccination, even if they had not been contacted to come forward. This was designed to help fill in any gaps, for example for people with no NHS number, or those with incorrect contact details on their NHS record. On 10 February we opened the National Booking Service ("**NBS**") to care workers, and by 15 February more than 100,000 health and care workers had booked an appointment.

g. Using programme authority to reinforce the importance of the target. We wrote to all LVS sites on 4 February 2021 to ask them to fill in a short form to confirm to us that they had offered the vaccine to all their patients in the relevant cohorts **[EL/033 - INQ000329444].** All but 12 indicated they had done so. We also recognised in this letter the difficulties of reaching housebound patients, and so offered a supplement to LVS sites for each housebound patient they visited. We conducted a similar audit exercise with hospital hubs and CCGs to ensure health staff had been offered the vaccine, and DHSC undertook a similar exercise with local authorities to ensure care workers had been reached.

149. By 15 February 2021 we had reached that first public milestone. The media could see we had delivered sufficient doses, and our internal audit reported we had offered to everyone in the relevant cohorts albeit there would be a small number of people who wouldn't have received a formal offer due to not having an NHS number or not having heard the requests to come forward. 12.9m first doses had been given in England, and 94% of those aged 70 and over had received a first dose. Even within this success we realised we had more to do and the internal audit recognised the need for additional steps to continue to encourage anyone in those groups who had not yet come forward to do so including by working with local communities to encourage uptake. We had plenty of data that indicated how we could improve how we worked to deliver every day, and there was much more to do to ensure high uptake in underserved groups **[EL/034 - INQ000421393]**.

Operational excellence every day

150. One of our team priorities was always operational excellence, building on the advice that the public's interaction with the programme would be a core component of their confidence in the vaccine itself. If delivery was perceived by the public as efficient, effective, safe, and friendly, then people would feel confident about what they – and we – were doing. The conviction, built on the WHO/SAGE paper cited earlier, that if we operated this way, we would in the end reach more people and ensure better uptake, enabled me to structure some challenging conversations when we were under pressure to go faster than I thought we had the capacity to do well. For example, pressure to launch vaccination centres before the NBS was ready, or pressure to be less stringent with allocations and allow sites to vaccinate at their discretion rather than within cohort. It also gave me the confidence to ensure that while public targets were often stretching, they did correspond to something I knew we had – or could build – the capacity to deliver.

151. The vaccine programme was a critical component of the ambition to deliver a roadmap out of NPIs and permit a return to normal life. It was understandable to me that from time to time, challenging targets were set or tested or assumed. We heard the Prime Minister talk in terms of 'moonshot' style ambitions and the 'ventilator challenge'. Sometimes, this pressure applied to the vaccine programme, through the PM office or via the DHSC and I deal with some specifics in this Statement.

152. Pressure on launching vaccination centres before the NBS was ready came from Government and the media. It was recognised that the NBS would not be live at the

same time that vaccines became available for administration but hospital sites and GP sites began providing vaccinations several weeks before the NBS could be used by the public. Vaccinations from community pharmacy commenced following go-live of the NBS. Pressure on allowing sites to vaccinate at their discretion rather than within cohort came from feedback from vaccination sites and from local authorities. There was a clear expectation on sites to take all reasonable efforts to vaccinate those within the 'live' cohorts as reaching those in most vulnerable cohorts first was a basic principle of the programme. As more cohorts opened, we allowed walk in appointments, creating a website to enable individuals to search for local sites offering walk in appointments.

153. We worked very closely with DHSC. There were representatives from DHSC at nearly all our daily meetings. It was critical to the success of the programme that we had an effective working relationship with DHSC and other organisations. We basically worked as one team albeit from different organisations with different delegation and reporting structures. This extended to the different parts of the DHSC team including social care, vaccine policy, SSHSC private office, permanent secretaries and the vaccines Minister's team. I set out the one team approach with DHSC in more detail from paragraph 295 of this Statement. It was intended to have a high challenge/high support environment within the team generally as well as with DHSC to ensure actions taken were robust – this ensured we didn't fall foul of 'group think'.

154. To ensure we didn't just deliver well every day, but continued to learn:

    a. We used what was there where possible, putting in new systems and processes only if the existing ones wouldn't work. For example, we used existing technology as the point of care solution for recording vaccination events within PCNs (as described in paragraph 111 above), which allowed us to rapidly onboard sites rather than having to agree, install and train new users.

    b. We planned. We learnt from our military colleagues and created "t-minus" plans wherever possible, for launches of new approaches or new parts of the campaign – for example when launching the Moderna vaccine or launching vaccination for those under 18. This allowed all involved to see what had to be true for a successful launch and helped us keep the different parts of the operating model in line with each other – data uploads with logistics preparation, site openings with public communications campaigns.

155. We constantly reviewed and improved our processes. For example, early on we could only give sites notice of delivery within a 12 hour block. Later on we improved our systems to give three days' notice, and then we were able to plan even further in advance. This allowed LVS sites to plan clinics further in advance and therefore improve the experience for recipients.

156. We constantly sought, and acted on, feedback from vaccination sites and stakeholders. We held regular webinars with those operating sites, and asked for open feedback in the chat, some of which we would answer immediately, others we would pick up separately. We were always open about what we could and could not change, for example sites flagged to us that they had to put a lot of work into ensuring they used all their vaccine, particularly towards the end of the day, and that for some large sites, their throughput was higher than expected. Given we were always looking to improve convenience, we therefore decided to allow walk-in appointments, and subsequently created a searchable website to allow recipients to search sites local to them that were offering this option **[EL/035 - INQ000421390]**.

157. We enabled operational decisions to be made at the most effective level. Early on, for example, a very structured workforce and staffing model was developed that sites needed to adhere to. Once experienced operational leaders started running vaccination centres they often found they could adapt this approach, whilst still adhering to safety requirements including the qualifications needed at different points of the recipient flow, as well as around social distancing, to better reflect their site layout and set up.

158. We used data to give us insight on what improvements could be made. For example, we built the Vaccine Equalities Tool – a mapping tool – so that we could investigate the link between site location, deprived communities and vaccine uptake. This helped us to better target the opening of vaccination locations, so that we could identify sites in locations with lower uptake to help improve accessibility for local communities. The tool was built during January and launched to Foundry users within the programme first on 9 February 2021.

159. We ensured everyone had access. This meant not only making offers to people to come and get a vaccine but also taking vaccines into communities to support uptake. For example, we adapted our operational guidance to allow local providers more flexibility in the way in which they delivered vaccines within their communities. We developed a roving model for vaccines. This was aimed at supporting those that were

housebound and their carers. We took the learning from the roving models to enable vaccines to be delivered in pop up locations, such as shopping centres or places where there was likely to be footfall. We enabled walk ins, rather than booked appointments, to maximise convenience. We enabled financial flexibilities to allow systems to buy vaccination buses which could be used to rove throughout communities or bolster capacity for our smaller vaccination sites led by PCNs. We encouraged local providers to deliver vaccines in new and different ways, such as twilight jabbing during Eid. There were many more examples delivered locally.

160. We tried new and innovative approaches, and we sometimes found these didn't deliver the outcomes we expected. Where new approaches didn't work, we sought to understand what the drivers were, and we shared our insights with local places to help others learn. For example, we wanted to allow whole family vaccination services and we piloted the approach but we found that we attracted people who were already vaccine confident and did not encourage those that were more hesitant to come forward.

Working with underserved groups to address inequalities

161. As discussed above, equal access was built into the programme from the beginning, and ideas such as ensuring no one was more than 10 miles away from a vaccination location were built into decision making during November and December 2020. However, in the initial stages our primary focus was first on ensuring we could vaccinate at all, and second on ensuring we were maximising the opportunities to vaccinate those in the first four cohorts.

162. We were supported in this focus by the National Incident Response Board ("**NIRB**") and other governance processes within NHS England, as well as those working on these issues in DHSC and PHE. For example, we took a paper to NIRB on 30 November to lay out our plans, and discussed our focus on using trusted voices to engage with underserved groups **[EL/036 - INQ000414404] [EL/037 - INQ000421376]**. I took a further update to the NHS England Board on 28 January which laid out what we'd done so far, particularly for those communities that had experienced disproportionate morbidity and mortality over the first year of the pandemic, in alignment with our core purpose as a programme **[EL/038 - INQ000414427]**.

163. The equalities team undertook some of the underpinning governance aspects of ensuring we built a focus on reaching underserved groups into decision making. For example, the team ensured that Equality and Health Inequality Impact Assessments were completed for all key policy decisions, ensuring that we considered any choices that would impact on vaccine uptake for those with protected characteristics or those in inclusion health groups. A detailed list of groups we considered is provided in the CWS. To deliver this they worked closely with NHS England's head of health inequalities and her team.

164. Reaching underserved groups was work that we recognised from the beginning could not be done by the national programme alone. Our role was to convene and catalyse work done in local systems, to provide a system, framework and approaches to share what was working, and to use national 'clout' to ensure investment and operational support was provided to those delivering every day. Equally, having the equalities team as a central part of my leadership team, with representation in our operational meetings every day, and in all of our key decision-making meetings, meant that we considered access for all in every key decision, from design of the data system, to selection of sites, to communications messages, through our reporting and to management of our funding.

165. As described above, the foundational framework we used was the 3Cs, and we had a particular focus on convenience given that was a lever that was largely under our control as a deployment programme. Decisions around where sites were placed and how a focus on equality of convenience became an increasingly strong part of national decision making are described above. Equally, we moved over time to support local systems to be as agile as possible in using their own judgement and relationships to set up both permanent and temporary sites to improve the convenience of access for all communities.

166. In terms of complacency and confidence, we focused initially on engaging with community leaders, recognising that messaging which came from within a community was more likely to be trusted by the community.

167. Engagement with local community leaders really started in January with work with Imams, leaders of African Churches such as such as Agu Irukwu of Jesus House in Brent, London, and involvement of Hatzola and Shomrim (Jewish charity health groups), to deliver vaccinations both on a roving model and in specially targeted clinics

for the Orthodox Jewish Community in North East London **[EL/039 - INQ000421391] [EL/040 - INQ000421408] [EL/041 - INQ000421394]**.

168. However, the challenge that we had to overcome to improve uptake in underserved groups became clear during January once we had good data on differential uptake in different minority groups, particularly when we looked at local data rather than the national level. Indeed, our PM meeting on 19 January 2021 focused on this, where our local government lead within the team, Eleanor Kelly, discussed options to do more with local government and stressed to the PM the need to do more to encourage councils to pick up and run with initiatives that had been developed elsewhere **[EL/042 - INQ000063253].**

169. On 5 February 2021 I and others again presented the Covid Vaccine uptake plan to NIRB **[EL/043 - INQ000330899].** We emphasised how central the work was to minimising morbidity and mortality, and we laid out the challenges we were facing in reaching specific underserved groups. Specifically we laid out that:

    a. Average uptake figures mask significantly lower uptake among BAME groups, in particular. Addressing inequalities is a top priority for the programme and a range of initiatives are underway including:

    b. An inequalities mapping tool has been developed and is available to regional teams and local authorities to support local planning

    c. A Vaccine Equalities Committee has been set up to provide focussed insight for strategic and deployment planning

    d. Continual engagement is underway with a wide series of stakeholders, especially those from Black African, Black Caribbean and Bangladeshi communities in order to identify and work through specific barriers to vaccination

    e. A Learning and Evaluation workstream has been initiated focussed on mapping and sharing best practice examples from Phase 1 across national and regional teams.

170. Details were provided of what work had been delivered and what was underway, for example, local partnership working, engaging with communities and other steps taken to remove barriers to access. Further actions included exploring funding options for local initiatives and working with partners to explore options for improving access to

vaccination sites including blood bikes (specialist motorcycles used to transport urgent and emergency medical items) and community transport.

171. On 24 February 2021 we received £4.2 million in additional funding from DHSC to drive uptake in minority groups. We rapidly tested a formal evaluation system to allocate this money, including if we could find a methodology to pro-rata the money by level of deprivation or similar, but the advice from our analytical team was that this would take longer, would not make a big difference to allocations, and that the need was urgent. We therefore distributed the money on a fair shares basis to local systems, via regional teams, to spend on increasing uptake **[EL/044 - INQ000414499]**, and then looked at what systems spent the money on and the observable improvement in uptake for specific groups. This funding was spent on a range of initiatives including: to reach out to sex workers, to provide interpreters to attend vaccine clinics, and, in some areas, door to door visits to allow 1:1 conversations with those hesitant to receive the vaccine.

172. I would in retrospect still have given local authorities the initial investment through this fair-shares approach. We did not know at the time what would be the most effective interventions as a programme of this type and scale had not been conducted previously in the UK – even for polio the vaccination campaign was directed at those under 40, starting with children from 12 months to 9 years, took six years in its initial stage and had regular criticism that it failed to meet demand given the challenges with vaccine supply. Giving each authority the ability to use its own judgement and understanding of the population to try and drive uptake was a reasonable approach, and once it had been conducted once, provided data to allow more targeted investment subsequently.

173. I presented the roll-out strategy to the end of 2021 to NIRB on 26 February 2021. At this stage, a total of 15.44 million doses had been delivered. 14.93 million of these were first doses, representing 95.9% of those aged 70+ (ONS). The strategy highlighted the importance of partnership working at every level, every step of the way. This plan recognised that engagement and collaboration across the NHS, local authorities, and voluntary, community and faith sectors across the country had helped to overcome hesitancy and improve uptake, and continued collective efforts would be required to continue to improve uptake **[EL/045 - INQ000414485]**.

174. One big part of ensuring equality of access was work directed at offering vaccination to underserved groups such as those who were homeless. We worked closely with local

councils to connect to their existing programmes of outreach, and many areas used the offer of vaccination to offer additional health checks such as dental care. For example on 4 March 2021 a GP outreach service partnered with a dental social enterprise group (Peninsula dental social enterprise) to offer dental care and support to those attending a dedicated Covid-19 vaccination clinic **[EL/046 - INQ000421383]**.

175. NHS England commissioned the Covid Rescue Foundation to deliver a series of Vaxi Taxi events in London. These locally tailored pop-up events provided information about vaccination, vaccination without booking and free health checks to over 800 people. A significant number of these were not registered with a GP and/or had no NHS number. A significant proportion of those vaccinated through this scheme were people who were homeless, people in temporary or hostel accommodation and sex workers **[EL/047 - INQ000414496]**.

176. We (nationally) and local systems worked on a daily basis with community leaders and organisations to build confidence in communities in parallel with ensuring convenience. We developed a network of trusted voices to help deliver vaccine messaging and instil vaccine confidence in their communities. Some of the examples of the work include:

    a. Targeted engagement with Bangladeshi, Pakistani, Black African, Black African Caribbean and Orthodox Jewish (Charedi) communities, supported and supplemented by national engagement with community leaders to develop and share messages, including BIMA, CAHN, Muslim Council of Britain, Masjids, Rabbis, London churches and many others.

    b. Extensive community media and social activity including targeted local and community radio, community TV, set piece webinars and articles with content led by preferences and needs of local communities.

    c. Regular social and communications content timed for holidays, celebrations and events such as Black History Month, South Asian Heritage Month, Diwali and Eid.

    d. On the ground interventions and offers, for example at community events such as London Halal Food Festival, Eid in the Square, Health Hopper Bus at Vishwa Hindu Temple (Southall, London), BIMA's Sehat programme, Health & Wellness Expo and other Black African & Caribbean community events.

e. New videos promoting vaccination were produced in English, Urdu, Arabic and Bengali, to supplement the suite of videos already available in around 20 languages, information sheets and postcards, co-developed with and shared through community organisations.

f. Celebrity-backed campaigns including with Elton John and Gareth Southgate calling on people to get vaccinated with the NHS campaign running during the Euros final.

177. In doing all this work we were well supported by community leaders and groups themselves, by the broader equalities team in NHS England, by senior leaders in government and by those in the NHS, including the CMO and DCMO who regularly met with clinicians and health workers from BAME backgrounds to hear their views and see how we could adapt what we were doing in response to their feedback. Examples of each included:

a. The BAME clinical advisory group presented to NIRB on 4 December 2020, outlining how the issues raised by their group would be incorporated into the programme's operations in consultation with them **[EL/048 - INQ000421384] [EL/049 - INQ000421368]**.

b. The CMO chaired an engagement session with BAME health professionals on 15 February 2021, with very broad participation. It was a valuable opportunity to hear from NHS staff about their own personal experience with the vaccine, and what was and was not working to build confidence in their communities.

c. PHE's regional director for London, Professor Kevin Fenton, convened multiple discussions both specifically in London and nationally, to ensure local intelligence was being incorporated across the country.

d. The Vaccines Minister held multiple discussion groups with different faith and minority groups, as well as with MPs who raised concerns from their constituents.

e. Covid-O discussed vaccination inequalities at several sessions, including a specific commission for the programme to provide an update on underserved groups on 4 May 2021 **[EL/032 - INQ000111080].**

f. As mentioned above, several PM update meetings focused on addressing inequalities, and our standard reporting to No10 included an analysis of uptake by deprivation decile and ethnic group on a regular basis.

178. As mentioned in paragraph 111 the NHS does not hold data on some aspects of health inequalities, including employment status, and some data is only held if the individual has chosen to share it – for example, being the victim of a crime, or reliance on drugs or alcohol. GP records were therefore critical in inviting people to vaccination, but could not be the only source of data on who was and was not receiving the vaccine. While we worked with the Department for Work and Pensions ("**DWP**") to specifically 'ingest' data on who was an unpaid carer, as described elsewhere in this Statement, we recognised that other data sets such as Home Office data on asylum seekers and refugees, and local authority data on people being accommodated and those sleeping rough, as well as Gypsy, Traveller and Roma groups, were not accessible to us nationally. Bringing those sources together locally, working with the expert local directors of public health, was a critical local-level activity.

179. Those from health inclusion groups were the most likely groups to not have digital access, or not to have a GP or an NHS number. We therefore provided routes to vaccination that didn't require an NHS number, providing a paper-based workaround at the point of care. When we realised groups, particularly those who did not have English as a first language and those concerned about their immigration status, may not know that they could still receive vaccination, we worked with local systems to make this part of their publicity for pop up events. One for the Chinese community in London's Chinatown, for example, experienced long queues when people became aware they did not need an NHS number to attend and resulted in over 2000 people being vaccinated in a day.

180. We also launched 'Everyone is welcome in General Practice' in mid-February 2021, with support from the RCGP, the BMA's GP committee, and several health inclusion charities and groups. The intent was to, where possible, use vaccination as a way to create stronger relationships between the NHS and underserved groups **[EL/050 - INQ000414497]**.

181. We also worked with charities working with specific groups to raise awareness and increase the likelihood individuals would receive a vaccine. For example, we worked with Groundswell, who support people experiencing homelessness, to produce and distribute access cards, as well as with local Healthwatch groups. On 21 March 2021,

11,114 people experiencing homelessness had received at least one dose of the Covid-19 vaccination.

Health inequalities groups

182. The VDP and the many local organisations and groups that formed part of the rollout took action to work with and for all ethnic minority and health inequalities groups. I have written about a specific set here, as well as mentioned initiatives such as trusted voices and community champions which worked with all groups. The inquiry has specifically asked me about several groups, for which further detail is provided here.

Those with a learning disability or autism

183. Prior to the vaccine roll out, the VDP was aware that people with a learning disability and autistic people would require different reasonable adjustment and support and worked to include adjustments to our set up plans that would allow access by them, for example, to adjust how appointments were made, and how the flow through a vaccination centre would work.

184. People with a learning disability and autistic people were given information about the Covid-19 vaccination. NHS England published two videos on 2 December 2020 featuring people with learning disabilities and autistic people asking questions about the Covid-19 vaccination **[EL/051 - INQ000414506]**. These videos were published ahead of vaccine deployment to ensure that people and their families/carers had time to consider the information being provided.

185. Materials to invite people to receive their Covid-19 vaccination were also produced in easy read format **[EL/052 - INQ000414421]**.

186. NHS England published two documents – one for clinicians, one for volunteers – providing 'top tips' for communicating with people with a learning disability and autistic people **[EL/053 - INQ000329451]** **[EL/054 - INQ000329452].** This information was followed by advice on supporting people with a learning disability and autistic people to receive adjusted care and support when being vaccinated for Covid-19. NHS England worked with Misfits Theatre Company to produce a film on reasonable adjustments in settings more generally and shared this in February 2021 **[EL/055 - INQ000414507]**. A podcast was also developed on vaccinating people with a learning disability and has been listened to more than 3,000 times.

187. The introduction of roving models and temporary pop up clinics had benefits for people with a learning disability and autistic people. Some large sites may have caused sensory issues and being able to be vaccinated in a dedicated clinic or in a familiar, quiet environment with plenty of time for questions and to feel comfortable with being vaccinated was welcomed by people with a learning disability and autistic people and their carers.

188. As with other parts of ensuring access, local innovation was important here. For example:

    a. As with local initiatives working with those experiencing homelessness, local clinics such as Calderdale offered additional health checks alongside vaccination. One such clinic resulted in 83 people with a learning disability being vaccinated, and teams also took the opportunity to carry out health checks for individuals at the same time.

    b. Clinics were run in the Midlands by Learning Disability nurses, and people with a learning disability and autistic people were invited to attend these sessions between 6 and 30 April 2021. There were over 60,000 people on the Learning Disability Register in the Midlands, and over two thirds of those registered had received their vaccinations.

    c. Six first and second dose sessions were also held in Leicester, resulting in around 350 people with a learning disability being vaccinated. Longer appointment slots, making the centre a quiet area, vaccinating some people in their car and bringing in Learning Disability nurses to work alongside staff administering vaccines were all identified as part of making the initiative a success. Feedback received included:

        > *"It was an absolute privilege to come and meet you all today. The team's passion was so visible, and lots of clapping for those who got vaccinated. The one person who you'd made special arrangements for in a private area who took an hour to get their vaccination was an amazing example of your compassion. Well done all and thanks to you."*

189. NHS England played a role in sharing innovations and local practice through the Connect and Exchange Hub, as well as holding national webinars on supporting

people with a learning disability and autistic people **[EL/056 - INQ000414459]**. NHS England also held a fortnightly forum with Government agencies, local authorities and VCSEs to share information. These forums, attended by organisations including Learning Disability England, Mencap and the National Autistic Society, allowed any challenges or themes experienced by the individuals to whom charities provided support to be relayed to the vaccination programme at NHS England and actions to be taken.

190. In order to overcome any digital barriers, national communication from NHS England also encouraged people with a learning disability and autistic people to call 119 or to speak with their GP with questions on vaccination. NHS England worked to ensure that 119 call centre and portal staff were able to respond to the needs of people with a learning disability and autistic people.

191. Data from May 2021 shows that 82.5% of the 248,801 people on the GP Learning Disability Register aged 16 to 64 had received at least one dose of the COVID-19 vaccination.

192. By September 2022, 85.8% of the 269,856 people on the GP Learning Disability Register aged 16 to 64 had received at least two doses of the COVID-19 vaccine.

Figure 5: Covid-19 Vaccinations for those on the GP Learning Disability Register

Of table 7a, those identified on the GP Learning Disability Register (aged 16-64)[4,5,6,7]		Number of people who have had at least 1 dose	Number of people who have had at least 2 doses	Number of people who have had at least 3 doses[8]	Number of individuals aged 16-64 on Disability Register[7]	% of cohort who have had at least 1 dose	% of cohort who have had at least 2 doses	% of cohort (not just those eligible) who have had at least 3 doses[8]
Total		239,727	231,456	194,510	269,856	88.8%	85.8%	72.1%
E40000007	East of England	27,300	26,453	22,833	29,979	91.1%	88.2%	76.2%
E40000003	London	28,486	27,202	21,361	34,657	82.2%	78.5%	61.6%
E40000008	Midlands	47,539	45,865	38,046	53,803	88.4%	85.2%	70.7%
E40000009	North East and Yorkshire	42,901	41,419	34,523	47,697	89.9%	86.8%	72.4%
E40000010	North West	30,865	29,626	24,340	35,321	87.4%	83.9%	68.9%
E40000005	South East	35,801	34,766	30,485	39,197	91.3%	88.7%	77.8%
E40000006	South West	25,584	24,940	21,933	27,746	92.2%	89.9%	79.0%
	Outside of England/Unknown	1,251	1,185	987	1,456	-	-	-

Those with a physical disability

193. As part of planning for vaccine deployment, NHS England was aware that people with physical disabilities and mobility issues may face challenges with attending and accessing mobile vaccination sites. If a person has a disability and is also clinically vulnerable, they may also have concerns about attending a centre with other people.

194. The initial sites were large centres, and social distancing rules and other COVID-19 precautions had to be navigated by teams setting up and running the centres.

Accessibility was considered at the development and set up of the sites, although some buildings may have had limitations.

195. As providers of NHS care, the Accessible Information Standard was used by vaccination centres. Where people were vaccinated at centres run by their GP, information about their access requirements and information and communication needs were more easily accessible as part of existing records.

196. The introduction of GP and community pharmacy sites required those commissioning the sites to ensure that their local vaccination services are accessible to all members of their community and take reasonable steps to improve access and reduce potential inequalities for people eligible to access vaccinations, and to provide information in different formats **[EL/017 - INQ000329393].** Temporary vaccination clinics were also required to be accessible **[EL/057 - INQ000414513]**.

197. Local areas working with GPs would have a good understanding of disabled people living in the area, and could make sure that they were being contacted in line with eligibility to receive the vaccine.

198. The introduction of the NBS allowed people to identify any access requirements and to select a centre at a time that worked for them that would be able to best meet their access needs. To ensure accessibility of the website, functions were available to:

    a. change colours, contrast levels and fonts using browser functionality;

    b. zoom in up to 400 per cent without the text spilling off the screen;

    c. navigate most of the website using just a keyboard;

    d. navigate most of the website using speech recognition software; and

    e. interact with most of the website using a screen reader (including recent versions of JAWS, NVDA and VoiceOver).

199. Letters and leaflets to advertise vaccination services were designed in large print format. For people and/or their carers that would prefer to speak to someone before making a booking, the 119 phone line was available.

200. Adaptations were made at centres, including having a dedicated phone line available to support someone with a visual impairment through their experience at the vaccination centre.

201. Ensuring training materials were available around the different types of access requirements an individual may have, NHS England collated and shared training resources. Resources shared include those developed by the Royal National Institute of Blind People around supporting people with sight loss and the Royal National Institute for Deaf People produced materials for supporting people who are Deaf or hard of hearing **[EL/058 - INQ000414478]**. A Standard Operating Procedure was produced for vaccination centres and Primary Care Networks to clarify the support available and to ensure that there were adjustments in place for people who use British Sign Language ("**BSL**") when attending a vaccination centre. Access to InterpreterNow was also available to ensure that there was access to BSL interpreters.

202. Some people with physical disabilities required transport to a vaccination centre, and NHS England worked with local areas to identify and fund individuals to get to and from these sites. For example:

    a. At the start of the Covid-19 vaccination programme in early 2021, NHS Nottingham and Nottinghamshire ICB considered how best to ensure that their housebound patients would receive the Covid-19 vaccination. A scheme was set up whereby a special 'roving team' of vaccinators would deliver the service to the household. A patient was deemed housebound if unable to leave their home through physical and/or psychological illness. They were identified by their registered GP.

    b. The Vaxi Taxi Project mentioned elsewhere was a service devised and run across London and supported by NHS England and London Fire Brigade to use black cabs to transport people to pop up Covid-19 vaccine centres and was specifically used to bring vulnerable people to a special vaccine and health pop up event in Bromley on 25 May 2021.

    c. In Birmingham a free taxi service nicknamed the "Birmingham Jab Cab" was funded by the NHS and was available to people needing their first, second or booster vaccination. This service was for residents with mobility issues or who faced financial or practical barriers to using public transport.

Targets

203. Ensuring access was strongly linked to my approach to setting targets for uptake. Most delivery operations would set targets and these are a good way of acknowledging realities and ensuring focus on critical deliverables. In addition, on such a high profile programme it is an important way of engaging and reassuring the public.

204. Assumptions had already been made before I took over the programme about uptake of the vaccine. VTF had needed these to ensure the right amount of vaccine was procured, and the NHSE team had used an assumption of 75% uptake in cohorts one to nine before I joined.

205. While assumptions were critical, I was not keen to set a target for uptake, either for the whole programme or for particular targets. That was for three reasons:

    a. I didn't think we knew enough about how the public would respond to this vaccine. Although we had access to good polling data from the Cabinet Office, we could have found that people behaved differently in practice to how they responded to a poll. Being way off a published target would likely reduce confidence in the programme overall, both in the public and in the government, and that would harm our ability to deliver, and for individuals to realise the benefits of receiving the vaccine.

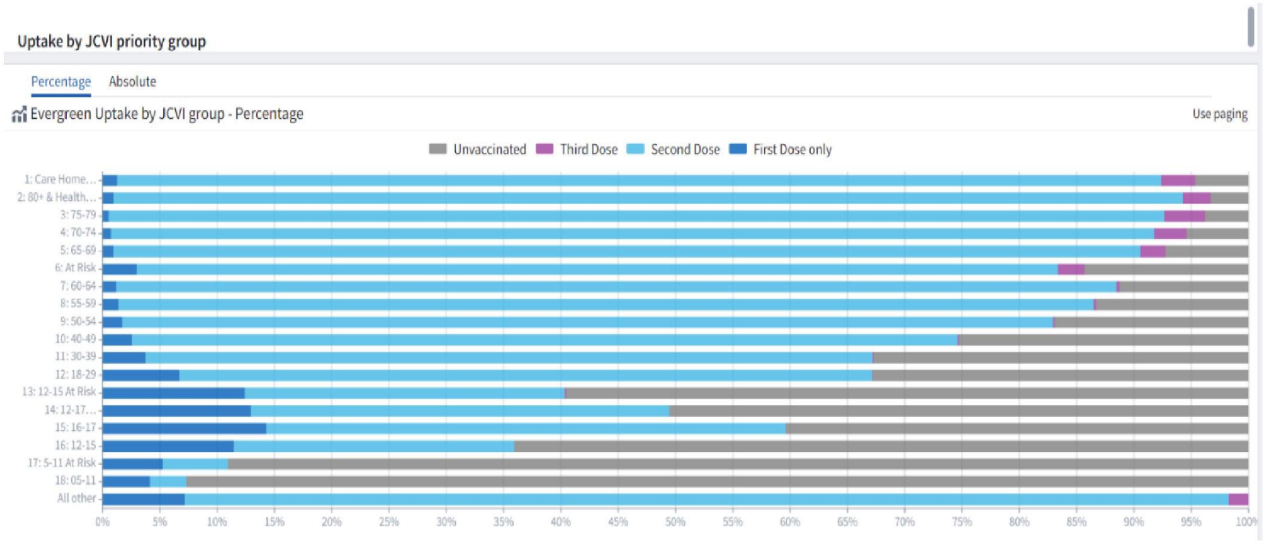
    b. I believed such a target could limit ambition – not in the overall programme given our purpose statement – but in individual sites and potentially in government. I wanted to avoid any likelihood that we'd hear 'we said we'd do 75% and we've now done 75% so we can dial back the efforts.'

    c. I was worried that a target could act as a disincentive to reach the whole population – by definition, with a target to vaccinate for example 75% of a cohort, it could be achieved by reaching the most proactive, most able to travel individuals with the best access to sites, and those with the ability to take time off work etc. I believed it was more important to have a profound need, at every level of the programme, to have made an offer to absolutely every person who was eligible for the vaccine, and for us to have worked with our partners to make it easy for everyone to have the vaccine.

206. Therefore in my view, in a vaccination campaign, differential targets could have multiple unintended consequences so I maintained the goal was always 100%. In

practice by July 2021 we had delivered 37.6m first doses and 27.8m second doses in those aged 18 and over, with over 95% of those aged 60 and over being vaccinated.

Figure 6: Uptake by JCVI priority group



207. Working from that basis, which had simplicity and was right, we worked to understand how to achieve it and adapted. This meant, as set out in more detail in the CWS, that we:

a. Learned about the challenges – we used specialist teams including in local government, held listening sessions with representatives of underserved groups, including for example with medics from a BAME background.

b. Had a focus on equalities from the start but used our increasingly rich data to rapidly adapt our approaches and increase our creativity and focus on reaching underserved groups. We used the existing approach of EIA assessment on our overall business case, on specific aspects of the business case, and on any policy changes that occurred during the programme **[EL/059 - INQ000421365]**.

c. Looked beyond the data – we invested to learn what worked and then scaled it up where we could, or simply shared with others where that wasn't possible.

d. Took bold decisions – we adopted a principle that if we had reasonable insight to suggest an action would benefit equality of access and that the downsides had been considered, we would take action and then review how impactful the intervention had been, rather than waiting to prove beyond doubt that an

approach would have a positive impact. In general it was then a case of choosing which beneficial change had had the greatest impact and prioritising supporting that. Our equalities lead or a member of the team was in every major decision-making meeting and so all our decisions were made with that lens.

Building confidence by following the clinical advice

208. The programme maintained confidence by making sure that we focused on the risk-based approach that was set out in clinical guidance for each campaign. The rollout was made fair and simple by sticking to the published priority order and framing messages around the importance of vaccinating the most vulnerable first. This is what underpinned our ability to be operationally excellent and provided a consistent approach that people would back. It was also important to define the bounds of flexibility that we would allow the system to operate within when, for example, people would come forward at a point in time that either wasn't the correct interval or at the correct moment in the campaign. In instances where this was the case for vulnerable patients and where we felt they were unlikely to make contact with healthcare services at another point in the future, we would provide the flexibility for people to be vaccinated at that point.

209. It was important to ensure that we had systems in place to maintain this approach. In supply terms, we recognised the importance of ensuring people came forward in priority order, but also accepted that in some instances we would be left with residual supply at sites. Given the programme principle of vaccination being like liquid gold we needed to prevent waste in those location-specific circumstances. (On webinars we often discussed how "the first rule of vaccine club is "we don't waste vaccine'"). We therefore agreed that sites would be able to use the vaccine up in eligible cohorts to prevent waste, even when those weren't the current most vulnerable groups – local decision making was key as clearly it would not have worked for sites to have to check every variation with the national team. Protecting the most vulnerable also meant the supply chain (including vaccination transition between sites) was designed to be agile enough to ensure that roving models that picked up very vulnerable cohorts, such as those experiencing homelessness.

210. We had to innovate our approach to tech and data to bolster our approach to clinical cohorting. For example, our invitation approach was initially based solely on demographic data held by the NHS in PDS – age and location. The NHS also holds

(separately) clinical information, specifically clinical conditions, historic events, and current and past medication. To ensure we covered all in cohort four we shared lists of the relevant clinical codes with GPs who could then use their own systems to invite the relevant groups, and later used clinical data nationally to identify specific clinically vulnerable cohorts, for example those with asthma, or those who were immunosuppressed. Because clinical data is held separately to demographic data, we had to run specific queries on the clinical database to retrieve cohorts for particular conditions and then add this information as a flag on the relevant record in NIMS before the information could be used to invite individuals. This was a complex technical and clinical challenge which I am not covering in detail here.

211. Cohorts which had neither a clinical nor a demographic basis could not be targeted by the data held by the NHS – for example specifically inviting care workers. Early on, as described above, where we had no targeting option, we used different solutions including working through employers and opening the invitation service to those self-identifying as care workers, but given shortage of vaccine, there was considerable concern that this could be open to abuse to 'jump the queue' and we were concerned about the programme being seen as unfair and which would undermine public confidence.

212. Cohort six, which comprised multiple different at-risk groups, required us to innovate in how we used different data sources to ensure those in non-demographic and non-clinical groups were safely invited. In particular, we knew there were potentially more than a million unpaid carers in England. This is not information held on the GP record. We were informed that DWP did hold that data, and we therefore worked with them to create a link to their data sets. We matched this data to NHS numbers via demographic checks and used the matched data to add a flag in the NIMS database, allowing a cohort to be created for call and recall. All vaccination events for this group were recorded via the point of care solution and recorded in the GP record.

213. We could simply have opened vaccination to all those identifying as a carer, and we considered different approaches to this such as allowing people to present identifying information at sites. We felt it was important to be able to formally invite them from the programme so that:

    a. We knew we had done everything we could to reach a priority group, minimising morbidity and mortality.

b. We had a denominator for this group so that we could record whether we were reaching them or not – and to help identify what it would take to increase uptake for them.

c. We made it easy for them to receive a vaccine – they didn't have to enter into a public declaration of their status in front of others at a vaccination location, and they were personally invited even when they were unaware of their eligibility.

d. We made it easy for sites to maintain flow, and not get into potentially difficult discussions with people presenting with incorrect information, thus disturbing others who were in the site at the time.

e. We ensured the programme was seen as fair, and effective, thus maintaining public confidence.

Maintaining confidence as we had to adapt

214. As partially outlined above, we had to continually adapt to changing circumstances. These included clinical changes such as the move to a 12 week gap between doses, followed, when cases started to rise in May, of a shortening to an 8 week gap; supply changes whether small day to day adjustments when a supply was late arriving into the country, meaning we had to inform sites that they would have to delay a clinic, or larger ones as the reduction in supply from late March 2021 that caused us to have to change the planned roll out for April dramatically. Changes also included ones we wanted to introduce ourselves, such as innovations in delivery models, or the introduction of the site making it easier to walk-in to receive a dose – the 'grab-a-jab' offer **[EL/035 - INQ000421390]**.

215. Some of these changes were straightforwardly difficult, others were beneficial. Many, particularly changes on how the vaccine was dispensed, risked reduction in public confidence – which needed to be based on a belief that the vaccines were clinically safe and that what we said about them was reliable.

216. Keeping this sense of dependability while incorporating changes was challenging. In some places we found it hard to maintain full confidence, for example for pregnant women where the clinical guidance changed early on. This is discussed further below in the communications and misinformation sections.

217. To maintain a sense of stability and control when guidance changed we focused on:

a. Keeping messages simple, and ensuring trusted voices delivered them – clinicians and/or members of local communities (depending on the message).

b. Being very clear what was required operationally of sites, and ensuring any changes were cascaded through NHS England's established operational channels so that we could track receipt.

c. Conducting two-way engagement particularly for large changes, so that sites could tell us what they needed to succeed.

d. Using data to measure if the messages had been understood and implemented and adjusting if necessary.

e. Rapidly updating operations to make the public experience as reliable and clear as possible.

Communications and engagement, public messaging

218. NHS England was tasked to deliver against Government targets and JCVI guidance. This meant everything it did was focussed on maximising its resources to achieve uptake, but NHS England was not responsible for the core public health campaigns to promote vaccination. Its role was to reinforce the messages and support those who were. This meant supporting the overall campaign in a range of ways directly and indirectly.

219. Work was carried out with Transformation Partners in Health Care. Translated materials were produced including vaccine information and videos using NHS England Covid-19 vaccination information in community languages. NHS England prepared Covid-19 vaccine communication materials via an internet resource page **[EL/061 - INQ000283346]** including a range of communication materials about the Covid 19 vaccine including:

a. Vaccine information in community languages;

b. Printable leaflets on Covid 19 vaccine information in community languages; and

c. Social prescribing resource pack. This was a resource pack for responding to vaccine hesitancy and was a "go to" guide to use when supporting patients who showed signs of hesitancy about the Covid-19 vaccine .

220. These resources were also shared and cascaded via the regional and system teams, as well as via partner channels such as the Local Government Association.

221. There was regular promotion of clinical voices to support improved vaccine confidence as clinicians, vaccine and immunisation experts, and recognisable frontline health workers such as GPs and nurses are among the most trusted voices. NHS England leaders made public appearances to amplify the communication strategy and NHS England's publications concorded with the campaigns. NHS England data was also used to understand why there were differentials in uptake and to thereby inform strategies at national, regional and local level about how to increase uptake and remove variation. NHS England also commissioned focus groups and used local insight and engagement to help understand the views of people on these issues, including what concerned them about the vaccine. This informed NHS England's response as to how to continue to build trust in the Covid-19 vaccine programme.

222. NHS England was aware that the NHS could not rely on invitations alone being sent to achieve uptake. There needed to be cascade messaging and outreach at both national and local level. This was supported by community conversations and engagement. It was an effort to move from broadcasting to help NHS England understand how to build trust with communities and confidence in the vaccine. In addition, there were novel approaches to delivering vaccines to under served, for example Traveller groups, through partnership working with local authorities and local community groups where for example, vaccination clinics were provided in the Gypsy and Traveller Horse Fair in Appleby, Cumbria. Messaging about this went into local papers. As well as informing NHS England's communications, the Covid-19 programme was distinct in that it also directly offered services to the public, so the communications and service provision were interlinked rather than separate. This work was carried out through information received via community engagement or in response to it, and vice versa. The communications and engagement element were an integral part of informing NHS England's delivery in a way that had not been done before **[EL/062 - INQ000414475] [EL/063 - INQ000414479]**.

223. Core communications were handled by DHSC and the Department of Culture Media and Sport ("**DCMS**") who had regular engagement with the communications teams in the various health departments and public health agencies across the UK, such as the communications team in NHS England. In terms of public messaging, the Cabinet Office was in the lead, coordinating across various Government departments, conducting polling and developing marketing campaigns, which were informed by

polling results. These campaigns included social distancing messaging. NHS England generally as well as the vaccination programme specifically collaborated with the Cabinet Office and DHSC in ways which reflected the respective capacity and 'reach' of each organisation.

224. For example, when the need for information on a specific topic was identified, the Cabinet Office or DHSC might produce the necessary content, and the VDP would use various channels to ensure that the material reached its intended audience and contributed to and at times led dialogue with other organisations.

Mis/disinformation

225. 'Disinformation' is defined as the deliberate creation and sharing of false and/or manipulated information that is intended to deceive and mislead audiences, either for the purposes of causing harm, or for political, personal or financial gain. 'Misinformation' refers to the inadvertent sharing of false information.

226. DHSC had overall responsibility for addressing misinformation/disinformation and issued all major marketing messages. Having been commissioned by DHSC, DCMS led a campaign to influence social media platforms and providers, such as Twitter and Facebook, to fact-check content before publication and to ensure that clearly inaccurate material was removed or labelled with 'health warnings'. DHSC chaired meetings with PHE and NHS England every day with an emphasis on sharing information. Many communications were issued directly from NHS England.

227. DCMS also engaged with social media organisations to minimise the impact of misleading material hosted on UK-based online platforms before the actual deployment of the Covid-19 vaccine. On 8 November 2020, it was reported that social media platforms had agreed a package of measures with the Government to tackle vaccine disinformation. One such measure was that social media platforms would work with public health bodies to promote factual and reliable messages. In its February 2021 Covid-19 vaccine uptake plan, the Government stated that it was working with the NHS to develop products and messaging to tackle vaccine misinformation. For example, a Government press release on 11 March 2021 reported that a new campaign, supported by the world's biggest social media companies, would tackle false vaccine information shared amongst ethnic minority communities. DCMS also produced a Covid-19 vaccine misinformation toolkit.

228. The key Government communication strategy was to promote the benefits of vaccination, the positive outcomes, and not to directly and publicly engage with the misinformation groups and the anti-vaccination groups.

229. The Cabinet Office was very involved in vaccine messaging and worked together with NHS England and provided funding. In the Foreword to the Cabinet Office's Annual Report and Accounts 2020-21, the Minister for the Cabinet Office confirmed that the Cabinet Office "has delivered one of the biggest public information campaigns to protect public health and reduce the impact on the NHS...". The report described the Covid-19 communications campaign as one of the biggest national communications campaigns run from the Cabinet Office with a total spend of £377 million, and explained that this prevented infections and helped deliver over 21 million downloads of the NHS COVID-19 App.

230. Within the programme, the response to misinformation was driven by public attitudes to trust. The main priority was to build public confidence in a new vaccine, and a range of positive measures were adopted designed to address both the general and specific nature of each incidence of misinformation. For example:

    a. As part of a proactive communication plan, creating space for authoritative clinical voices by securing more exposure for doctors across broadcast and print media, as well as social and digital channels, to directly counter misrepresentation of facts (sentiment testing and polling were conducted each week). An example of one of the actions from this communication plan was the article in the "i" news headed "NHS blueprint for tackling vaccine hesitancy will fight misinformation and work within communities" dated 17 February 2021 written by NHS England's Medical Director of Primary Care.

    b. Finding appropriate community leaders and trusted voices for those groups that needed increased confidence. For example, when it became clear there were high levels of distrust in vaccination in the Somali community in England, NHS England worked in partnership with a local GP to make videos in Somali including a video in Somali with subtitles to assist deaf patients **[EL/064 - INQ000421385]**. The first video was streamed live on YouTube on 27 December 2020.

    c. Finding and working with other respected organisations who could add weight. For example, when some pregnant women became so concerned about

potential for vaccines to harm their babies that they were reluctant to be vaccinated and discouraged other pregnant women from being vaccinated, one part of the approach was to work with the Chief Midwifery Officer and the Royal College of Obstetricians and Gynaecologists to help people understand that such concerns were unfounded. There was changing policy for the vaccination of pregnant women as more was learnt about the safety and efficacy of the vaccines, as well as about the morbidity and mortality of pregnant women with Covid-19, and it was important to engage with these trusted leaders. NHS England also engaged with groups that work with parents to share information and help people have access to the information they needed to make an informed choice. These included, for example, live sessions on Mumsnet with clinicians to answer questions, as well as other fora.

d. Supporting those directly dealing with the hesitant public by providing training such as Vaccine Hesitancy call handler training – carried out by the NHS North Central London Clinical Commissioning Group.

e. Identifying knowledge gaps where explainers could help. For example, in Devon, a toolkit entitled "Health Professional Toolkit to support vaccination uptake" was prepared. The purpose of this internet page was to enable further support, guidance and signposting to providers in Devon who were contacting patients who did not attend ("**DNA**") their vaccination appointment or had not responded when contacted for their appointment. There was a specific resource page for those identified as vaccine hesitant and resources were signposted to address concerns about efficacy, mistrust of the system / services, safety, concern about side effects, apathy and a lack of information to make an informed choice.

231. Regional teams often were most aware of problems in their local populations using hard data, soft intelligence and networks. In the North region, for example, teams learned from members of the Pakistani community in West Yorkshire what people were worried about and what could be done to address their concerns. In response, work was carried out with local clinical leaders to produce social media content to provide appropriate reassurance, and to institute measures such as running targeted clinics for particular groups, including women-only sessions with a local GP in line with aspects of Muslim observance.

232. The programme produced Covid-19 vaccine communication materials. This was an internet resource page for use in communities to provide reassurance that the Covid-

19 vaccines were safe, effective and independently tested to the highest standard. The page included NHS staff recorded messages in some of the most spoken languages in London, and also included the Social Prescribing Resource Pack, designed to address vaccine hesitancy **[EL/061 - INQ000283346].**

233. In December 2021, NHS South East Region produced an information pack, "Learning From Our Community – Equality Stories from our Covid-19 Vaccination Programme". The pack presented some of the innovation and learning gained over the Covid-19 vaccination programme. It provided good practice and case studies with tips and messages for vaccination services in the future, such as work with the Chinese community in Hampshire and the Isle of Wight that highlighted concerns about how people's private information would be used rather than hesitancy caused by vaccine safety concerns. It was stressed that only essential information would be taken in order for a vaccination to take place. This resulted in two successful clinics where 255 people were vaccinated. The pack specifically addressed attitudes and beliefs in respect of pregnancy and fertility and the case studies referred to videos specially produced by clinical specialists to target people who were apprehensive about the safety of the vaccine. In partial response to this the South East "maternity champions" were placed in antenatal clinics in patient wards from the beginning of 2022 to offer 1:1 conversations to answer questions about the vaccine and to signpost pregnant people and new mothers to book vaccinations **[EL/065 - INQ000414461]**.

234. Work on mistrust and misinformation was also highlighted. Work had been carried out in respect of BAME communities and mistrust in the vaccine. To address attitudinal barriers, work across the southeast included the setting up of "NHS Vaccine Voices" to provide free initial training sessions to people living and working in the region who had confidence in the Covid-19 vaccine. This training empowered attendees to support those in their communities who were unsure about the vaccine through opportunistic conversations by providing information about the vaccine and conversational tools **[EL/065 - INQ000414461]**.

235. Mis/disinformation was discussed within the vaccination programme regularly, to review whether we were taking the best approach to address it. That approach was to respond positively to concerns raised so, for example, if there was social media "chat" about side effects, we would produce content that responded to this. If there was concern about fertility, then we would push the content on that. For example, an internet resource page set up for everyone to "Get the Lowdown" on reproductive health was worked on in partnership with the NHS and a Reproductive Immunologist

and a Consultant Obstetrician and Gynaecologist to discuss the latest research on the Covid-19 vaccine, fertility and periods.

236. The approach was not therefore to directly and publicly engage with dis/misinformation groups and the anti-vaccination groups. It was considered that to do so would give more airtime to this type of messaging. While the organisations involved in messaging did not hunt down message forums or platforms to tackle specific examples of dis/misinformation, myth-busting was used as an appropriate approach to disseminate positive messages. Examples include COVID-19 vaccine myth-busting videos with celebrities and an article in the Times **[EL/080 INQ000486278]** in which a panel including Nikki Kanani, medical director of primary care at NHS England, and Professor Jacqueline Dunkley-Bent, chief midwifery office at NHS England, dispelled myths about the vaccines

237. By April 2021, and as presented to the VDP's Vaccines Equalities Committee, we were preparing a communications campaign for Phase 2 of the vaccine deployment with the target audience of 18- to 50-year-olds. We were concerned that this younger age group, being vaccinated as restrictions started to lift, and with less personal clinical risk, would be challenging to reach. The main focus was the hesitant ("probably would/would not") and resistant groups ("definitely would not") but excluding rejectors who had strong anti-vaccine sentiment. We used YouGov polling data from 7 February 2021 to inform this research. The research indicated that the vaccine hesitant had concerns over side effects and wanted others to have the vaccine first. The vaccine resistant did not think that the vaccine would be safe and had concerns over side effects.

238. We decided that in this phase our best strategy was to use a mainstream, paid media approach. There were higher levels of hesitancy and resistance present in these younger age groups and therefore the focus should be on reassuring and persuading them to get the vaccine. It was time to tackle vaccine confidence more overtly within the mainstream groups, reassuring groups that were more concerned about the risks.

239. The most challenging group to consider in communications terms was children. Within the medical community there were people opposed to vaccinating children and there was an ongoing debate about whether it was ethical to pursue a hypothetical protection of adults while some were claiming that it was exposing children to harms, known and unknown. NHS England followed advice from the Chief Medical Officers, as described elsewhere in this Statement, and vaccination for 12 to 15 year olds who

were not in a clinical risk group started in September 2021. By December 2021, when the booster campaign was running, vaccinating children had become part of the public narrative, and in January 2022 the public message for boosting children aged 12 to 15 was: "Getting vaccinated protects them, their family and their friends, letting them stay at school and continue socialising".

Autumn Covid-19 vaccination campaign in preparation for winter 2021/2022

240. I left the programme in early July 2021, with Professor Sir Keith Willett taking over from me. By that date, we had completed the offer to all adults, delivered 82,413,766 doses, and the country was coming out of the final stage of the second lockdown.

241. The challenge for the summer was to continue to ensure first and second dose vaccinations were available for those who had not yet been vaccinated, vaccinate the at-risk 12 to 15 year olds, further develop the operating model for the vaccination of children should it be determined by government this cohort should be offered vaccination, and plan for the delivery of an autumn winter booster campaign should it be confirmed a booster programme was to be introduced.

242. Over the summer and early autumn of 2021, I participated in meetings from 'the other side of the table' in Downing Street. My sense was that the programme was being run effectively and planning for the autumn campaign proceeded over the summer. Towards the end of the summer, as the potential to offer vaccination to children was being developed, the planning for the team was much more complex because of the different requirements that needed to be met to vaccinate children. The details of how decisions were made on this issue from an NHS England perspective are contained in the CWS and I defer to that internal perspective given I was out of the programme at the time.

243. Once the JCVI guidance for the autumn booster campaign was confirmed on 14 September 2021, the programme started vaccinating 2 days later. Offering vaccinations to those over 50, and at-risk cohorts, six months after their second dose, the programme asked people to wait until they were invited to book a vaccination. The programme had been asked to bring forward the launch of the autumn booster at short notice in September **[EL/066 - INQ000421392]** and that had meant challenges in aligning with the flu campaign which had originally been intended to run in parallel and be more joined up than the previous year. Flu vaccine for winter 2021 was largely

purchased by the dispensing organisations (for example, GPs) and so bringing forward supply could not be expedited nationally.

244. During the autumn the programme continued to deliver to time and was building capacity to deliver high volumes through the autumn on both the winter booster and to expand the capacity available to vaccinate children.

245. From the start of October I was asked to spend more of my time in my Delivery Unit role supporting the programme to increase throughput. I held a 'red team' session in DHSC to review the rollout plan for children aged 12-15s on 12 October 2021 which I felt was productive but I could see some of the same challenges around the complexity of bringing different programmes together, and the fundamentally different and more challenging operational set up for vaccinating children through schools, were causing barriers to delivery.

246. On 20 October 2021, when I was ill in bed with Covid, I was called by Dan Rosenfield who told me that the PM wanted me to go back full time to NHS England to run the winter programme. After a discussion with my family, and discussion with Dan Rosenfield, the PM and with Amanda Pritchard, now CEO of NHS England, we agreed on balance it was best for me to return, in part because the growth in Covid-19 cases and wider winter pressures indicated Keith Willett would again be needed to lead the NHS winter response.

247. I rejoined NHS England as National Director, Vaccine deployment on 25 October 2021. I found a programme that had built effectively on what I had left in July, and at the same time one that had adopted a different philosophy to earlier in the campaign. The winter booster campaign was focused on building the capacity to deliver vaccination to approximately 75% of the relevant cohorts before Christmas. The responsibility to decide how to do that and at what pace had been delegated to regions, and, in some cases, to ICBs (of which there are 42 in England). Because of this target, regions were focused on growing capacity so that they would meet the December deadline, rather than optimising for a faster rollout. This was designed to maximise the efficiency of deployed resource. For example, in the spring of 2021 we did everything we could to fill available slots at vaccination centres, including producing bespoke forward capacity analysis against available vaccine, and we tried to find ways to use their additional capacity rather than have them withdraw it from the booking system. The approach in the autumn was to more precisely match capacity to demand and to avoid any spare capacity.

248. The ability of the winter booster programme to go faster was thus constrained by capacity. The capacity constraint did not fit with the increasing concerns in autumn 2021 about growth in Covid-19 cases, and I don't think had been fully understood by government. The NHS was shifting back to a more 'peacetime' focus on conserving resources and the success criteria for the programme had been set on meeting a specific need. What hadn't been clear was the trade-off in how quickly vaccine could therefore be deployed.

249. The children's vaccination programme had a similar, but more complex challenge. The decision had been taken to offer vaccination through schools as this was the best option for ensuring equality of uptake – almost all children have the chance to be vaccinated at school, only some children would have parents who could take them to get vaccinated. This approach had been worked through with DfE before the summer holidays, and the potential downsides (new-for-this-vaccine deployment, time required to set up, potential capacity constraints) had been noted, but the equality considerations were considered critical and it was felt the programme would be able to address the potential operational constraints, so this was the recommendation to DHSC and DfE, and the chosen strategy.

250. School vaccination services are commissioned by NHS England (SAIS, or School Aged Immunisation Services). These services run the regular annual flu vaccination programme for schools, for example. The vaccines are delivered by NHS trained nurses in school settings. There are approximately 60 SAIS providers in England. Schools work with the SAIS teams to agree visit dates, plan the visit, and distribute the invitation to parents for them to consent to vaccination. Schools are expected to provide access, to provide some equipment (power cables etc.), as well as to support children through the vaccination process, including asking the school nurse to support any child who may find the experience stressful.

251. There are over 24,000 schools in England, with 3458 secondary schools the initial focus of the autumn 2021 campaign which aimed to offer vaccination to 12-15 year olds in particular – vaccination for 16 and 17 year olds had been started on 6 August through existing VDP channels. SAIS teams had already planned the autumn flu programme when the government decided to offer Covid-19 vaccination to 12-15 year olds.

252. Within these 3458 secondary schools, there is a mixed economy of local authority-controlled and, significantly, independent academy chains, as well as independent

schools and schools for those with specific needs, which made mandating a single solution across various autonomous educational structures very challenging. We needed DfE's reach and connections to help design the right answer and then to work with us to manage and oversee it.

253. Work had been conducted by the programme and by DfE to assess how to support these services to deliver a more complex vaccination than flu at scale, without disrupting the flu programme. The Covid-19 vaccine programme had requested sign off by government of the approach in June to ensure communications with schools could happen before the end of term. This didn't happen for a number of reasons:

    a. JCVI had not yet considered the vaccination of not-at-risk 12 to 15 year olds and so approving an approach might have been considered premature.

    b. In the early summer of 2021 the government was focused on ending the second lockdown, and completing the offer of vaccination to adults.

    c. In general, engagement across government on the details of planning across many aspects of the VDP after the initial in-depth work in December 2020 to April 2021 was not high. The government wanted to know that there was a plan to vaccinate children, but there was less interest in the 'what would have to be true' aspects of delivery. Concerns raised from DfE, in particular that if the programme was to be ready to go live in September, schools and SAIS needed time to prepare before the end of the year in July, were noted but not engaged with extensively.

254. The delivery programme for 12 to 15 year olds therefore had to be set up at pace in early September. This put several challenges in the way of meeting the target of visiting most schools by October half term. For example, it did not provide sufficient time to train additional workforce to support existing SAIS providers. In addition, JCVI's recommendation laid out the marginal clinical benefits of vaccinating this age group, meaning the programme had more challenges with confidence and complacency than for other cohorts.

255. The school's programme was therefore capacity restricted, and also had a problem of much more complex logistics, as vaccination teams needed to arrange school visits to more than 3458 locations, to vaccinate all of the eligible children during a single visit to a school site, needed parental consent in advance, and required relatively large spaces to manage the flow of recipients and the 15 minute wait after vaccination. Not

all school set ups allowed for all of these conditions, which meant that some schools required multiple visits. In addition the SAIS teams needed to in parallel offer flu vaccination to all children from reception to year 11 (an extended programme compared to pre-pandemic).

256. On top of this, the data flow from schools was cumbersome and slow. Data was only received once a week, and DfE had to undertake a manual checking process. As operational problems were identified, it was hard for DfE to enact changes as DfE has an arm's length governance role with schools. In October Nick Hulme, the CEO of Colchester and Ipswich NHS Foundation Trust had been asked to join the vaccine deployment programme to bring focussed NHS leadership to this part of deployment, and as I rejoined the programme he was starting to get to grips with what would need to be true to make progress at pace on offering vaccination to children. He made the recommendation to increase convenience for families and allow parents of 12 to 15 year olds to book appointments via the national booking system. The VDP implemented this advice, and by the end of January 2022, 58% of eligible children had received a first dose.

257. When I returned to NHS England on 25 October 2021, my main focus therefore was to bring energy and ambition into the entire programme. We reinstated a tighter rhythm of operational meetings, held sessions with each region to see what it would take for them to speed up delivery, and we used the concerns about the growing case numbers to create more energy within our public communications to encourage people to come forward for vaccination. Over the next four weeks, we increased the weekly validated vaccine events by 2.05 million. Some of this increase was already in the scope of the existing plan, some of this was achieved by bringing forward capacity that had been planned for December and by extending hours and adding new sites in areas which were underserved – increasing convenience for recipients.

258. Bringing forward the planned capacity turned out to be fortuitous because by the end of November there were increasing concerns about the Omicron variant. This variant was causing cases to rise rapidly. On 30 November the government announced that all adults would be eligible for a booster shot. This was a significant change to the original scope of the autumn booster programme, which had originally only been recommended for those over 50 and those most at risk.

259. On the evening of Friday 10 December, two days after the one year anniversary of our first vaccination and the day we hit 100 million vaccines delivered, I received a call

from the PM. He was concerned about the rise in cases and wanted to see what we could do to push much harder to offer vaccination to all adults by Christmas.

260. I rapidly calculated what the potential numbers in terms of capacity and vaccination events would be whilst on the call, and suggested that although we had planned a big ramp up over the next two weeks, I did not think we had the capacity to offer vaccination to everyone who had not had a booster at the time. However, I could see we needed to push and suggested I do some more work with the team and discuss with him in No10 the following morning.

261. The team and I worked over that night to see what we thought was possible. We were already planning to go from 2.5 million vaccines delivered in between 6 and 12 December to 3.5 million in the week commencing 13 December. Theoretically the capacity we had grown over the previous few weeks should be sufficient to deliver 5 million vaccines in a week if we maximised use of the capacity, including increasing hours, staffing and reducing concern about waste by maximising our vaccine distribution, but that was dependent on appropriately trained staff to be in the right place, for sites to open up more capacity for bookings on the national booking system, as well as for people to come forward for vaccination. I made a list of what we'd have to do to get to this level of vaccination and the team did the modelling to see what the maximum looked like **[EL/067 - INQ000064274].**

262. The following morning I joined a meeting in No10 to discuss this **[EL/068 - INQ000145771].** There was deep concern about the potential impacts of Omicron. I ran through the modelling and proposals we had put together but further work was requested ahead of a discussion that evening to see what could be possible in a 'no holds barred' approach, including redeploying civil servants to expand capacity and increasing funding for sites to enable them to fund the workforce to operate later into the night and so on. I note some Whatsapp messages between meeting attendees suggesting further clarity was needed from me. This was provided and we continued to proceed at pace.

263. Specifically, on the no holds barred approach, the team worked rapidly across all relevant areas to execute a plan to scale at pace. We brought together different teams of people, including national and regional groups, and expertise from other areas, including the military, royal colleges, and we sought advice and 'critical friends' from the specialist areas like primary care and Directors of Public Health to help us consider what would need to be achieved across the board before we were hampered by

thinking about an ability to get there – as mentioned above, what did the maximum look like.

264. The teams were also able to work very effectively and to communicate innovative solutions successfully because we had established relationships that could be put to good use such as with military logistics experts. For example, I called General Phil Prosser to ask his advice, although he had left the programme in June 2021. We also had trusted processes in place to communicate information immediately and to pull people together rapidly.

265. All of the work we did that day and over the weekend indicated that although there was additional action we could take to further ramp up capacity, the most the system could deliver over that two week period before Christmas would be 5m doses a week – 1.5 million more than we had ever done before. A very significant increase. Supply was not a constraint.

266. The following morning (Sunday 12 December), we discussed the proposals with the PM **[EL/069 - INQ000354766].** I explained we could set substantial additional capacity up to deliver in about two weeks, but we couldn't double capacity with no notice. This meant it was not feasible to set a public target to vaccinate everyone by Christmas, but we could support a target of an 'offer to everyone by New Year'. Offering everyone a booster by New Year was very stretching but was theoretically doable, even though that was clearly less attractive politically. I insisted, as I had done earlier in the campaign, that any public target must be at least theoretically achievable so that we maintained public confidence in the vaccination programme.

267. The trust I had established with the No10 team previously helped us have a difficult conversation and to end up with an absolute commitment from government to support us with any resource or support we needed. The public target set was to offer every adult a chance to receive a booster (or their original first or second dose if they had not previously had one) by 31 December. This was 26.6 million people **[EL/070 - INQ000421398]**.

268. At the same time we were mobilising the system. We held meetings during Sunday 12 December with NHS regional directors, with the Secretary of State for Levelling Up, Housing and Communities and with teams across DHSC, and with ICS leaders to get their support to ramp up to our maximum possible capacity.

269. As a result of this work, we put in place:

a. Rapid contracting processes for systems to set up vaccination sites in new and accessible places and a process for systems to request funding for equipment or team re-deployment. We asked for formal permission from the Cabinet Office to direct award contracts to meet emergency need over the period as an option of last resort with contract durations of under 3 months prior to progressing to formal procurement routes.

b. Processes to maximise the workforce. We capitalised on what we had and in parallel built an expanded workforce. This meant that we ensured registrants at all sites had a message inviting them to train/ explain where they were in the process. We set up a daily cross-department touchpoint chaired at Second Permanent Secretary Level to review and deploy voluntary civil service vaccination support.

c. Communication of clear messages. It was important to get the communications right. This included ensuring that key deployment lines were clear, particularly for messages to land from influential and high profile decision makers, including the PM.

d. Accelerated operational processes. We turbocharged pre-existing processes such as the control tower to safely speed up site assurance, including tech and data onboarding.

e. With colleagues across government, a name for the effort that people could get behind as part of a collective national mission, that was clear and easily understood; “Get Boosted Now”.

f. We agreed to part suspend the Quality and Outcomes Framework to allow GPs to focus on vaccination.

270. Our vaccination delivery increased every day that week and the next. Saturdays were always the most productive days. Between Monday 13 December and the end of day on Friday 24 December we delivered around 8.2 million doses of vaccine.

271. This work was tremendously supported by a very effective public messaging campaign about Omicron, and strong interest in the booster dose from the public who were keen not to repeat the previous year's experience of not being able to spend Christmas with friends and family. We had people queuing for hours to receive vaccine at some of the big centres.

272. This period gave us perhaps the clearest data on the importance of public messaging than at any other time in the programme. The public were energised to get a booster, with doses delivered increasing immediately following the PM's speech about Omicron on 13 December **[EL/071 - INQ000421397]**. Equally, following media coverage highlighting that Omicron appeared to be a less virulent form of Covid-19, particularly for younger people, initially reported from the week before Christmas but more intensely from 27 December, our appointment bookings dropped and our DNA levels spiked.

273. Interest in receiving the booster did continue, albeit at a lower level, into January, and we did everything we could to make the most of the capacity that had been stood up. One of the major challenges was that a lot of vaccine had been shipped to sites so that supply would not constrain delivery. In mid-January some of that vaccine started to hit its expiration date. We employed a variety of ways to try to use it, but because of scaling the operation and the following drop in demand, we did end up having to waste doses. In July 2022, the published vaccination statistics **[EL/082 INQ000330328]** indicated that the programme had administered 125.9 million Covid-19 vaccinations since the start of the programme. 5.04 million (4%) doses had been recorded as waste by vaccination sites and under 1 million (0.7%) doses reported as waste, expired or damaged by wholesale partners **[EL/078 INQ000486277]**.

274. I had committed when I returned to the programme to make sure that the handover to a successor was completed with a longer handover period and a clearer plan of action. I spent time in early January with Amanda Pritchard to interview potential candidates. One stood out and was appointed: Steve Russell, who had previously worked at NHS Improvement, and was CEO of an NHS Trust. Steve started to spend time in the programme from February and we together led a workshop with all relevant individuals on Thursday 3 February to scope and define the future focus of the programme. Key questions included the link between flu and Covid-19 vaccination, the scope to apply lessons learnt from Covid-19 to other immunisation programmes, what a 'BAU' programme would look like for Covid-19, and the link to screening programmes.

275. I completed my time on vaccines by attending a Public Accounts Committee hearing on the second NAO review of vaccination on 28 March 2022.

Working with stakeholders

276. My experience from the pandemic, including both the work I was involved in to establish the parallel supply chain for PPE and in particular from the vaccine programme, is that during a national response there are a lot of people 'on the pitch' and it is critical to make the most of this support, while maintaining clear roles, collegial relationships and effective working practices, and while ensuring that the differing expertise and roles being played are all heard in a constructive way to inform great decision-making.

277. The vaccine programme had already put in good foundations with partners to utilise others' enthusiasm and interest, such as Directors of Public Health, before I joined the programme, but was in a more challenging position managing the assurance and oversight that others wanted on our work, as outlined above from paragraph 50. Over the first few months of the programme it became somewhat easier, as trust was built between key individuals, as roles settled down into more of a regular rhythm of decisions and responsibilities, and as the government started to see results and feel that the programme was well run.

278. While the vaccine deployment team was at the heart of delivery, we were effectively supported and challenged by a network of stakeholders in government; we engaged and mobilised large parts of the NHS and the public. The programme would not, in my view, have been as successful without this sense of collective endeavour.

279. This Statement covers only a small amount of the partner working and range of stakeholders who needed to work together to deliver the world's fastest and most accurate vaccination roll out. I add here my personal experiences of working with them and observations of what we can learn.

DAs

280. My overall observation is that in a pandemic it is obvious there will be a need for a joined up UK health response and as to how the government machinery can work together well, I look forward to the findings of M2. In my experience, at a vaccine programme level the single purpose to offer the entire UK population the chance to receive a Covid-19 vaccine enhanced the collegiate working.

281. Working with the three DA SROs we tried to maintain everyone's confidence and parity of access by ensuring we aligned approaches as far as possible. There were some

areas, like dates of first vaccination with Pfizer and AZ, where we agreed to go together and made adjustments to our programmes accordingly. There were some where we diverged without prior discussion, for example on opening of new cohorts after the initial phase. Occasionally these were contentious, but we tried to avoid any sense of competition.

282. Equally there were areas, such as methods of vaccination for particular groups, where we either had to do something different, or chose to do so. For example, in Scotland the legal administration of care homes is under the control of the local health authority, and so in-hospital pharmacies were able to sub divide boxes of Pfizer vaccine and supervise transportation of the vaccine to care homes, meaning that they started large scale roll out of Pfizer to care homes earlier in December than we were able to in England. The legal framework in England is structured differently with local authorities, rather than health bodies, responsible for commissioning a range of services delivered at care homes. While the NHS often works in an integrated way with local authorities to provide joined up health and social care, the VDP had to work within the legislative framework in place at the time. Any change to this legal framework would be very significant and is a point on which the Government is best placed to respond.

283. We maintained the sense of collegiality and an ability to learn from each other in several main ways:

    a. The DA SROs were invited to our England programme board. They regularly attended, along with their CMOs on occasion. They also joined other critical meetings, for example we all presented together to the committee on human medicines of MHRA on Saturday 21 November about our plans for deployment.

    b. The DHSC vaccine policy team hosted a weekly meeting for the four nations to discuss relevant issues. These were often operational, but occasionally more strategic. Originally I chaired these, but over the summer of 2021 the chair started to rotate.

    c. As discussed in more detail below , we had an SRO WhatsApp group **[EL/083 - [INQ000477804]**, including the DHSC policy lead, so that we could quickly update each other if things changed, for example on the night of 8 December after the two adverse events discussed above, to line up comms timelines and ensure all four countries enacted safe policy in an aligned way. This group was used more early on when the situation was often rapidly changing, but provided

a social as well as a professional connection and maintained the sense that we were all in this together.

The SRO WhatsApp group

284. I have been asked to comment on a number of specific exchanges between members of the SRO WhatsApp group [EL/083 - INQ000477804], in which members expressed disagreement or disapproval of particular decisions, policies or publications or the handling and timing of them. Before addressing the substance of those specific queries, it is important to note that the SRO WhatsApp group was set up and functioned as an effective problem solving forum where the SROs from the four nations, and the DHSC policy lead, could freely and directly raise or escalate issues requiring prompt resolution. Working at speed, most days, weekends and with the challenges outlined in my statement meant it was inevitable that as a group we needed a way to quickly communicate concerns and frustrations. The frank and direct nature of some of those exchanges is reflective of the need for this valve and an informal mechanism to react and 'problem solve' quickly. The selected exchanges which I have been asked to address are not, in my view, indicative of any relationship problem or rift between the SROs and/or Governments of the four nations. As set out in paragraph 283, the relationship between the four nations' SROs, including the DHSC policy lead, was collegiate and constructive. The WhatsApp group contributed to this in promoting candour, escalation and reactive de-escalation.

285. Against this important context, I deal with some messages I have been asked to address.

286. I have been asked to comment on whether the WhatsApp messages at pages 3-4 between 15-16 December 2020 and my request for an "urgent chat" on data strategy were reflective of any differences in the approach to data collection and reporting between the four nations of the UK, what mechanisms of data collection were being used or considered at the time and whether any challenges arose in connection with the adoption of different approaches to data collection and reporting. It is worth noting that the disagreement expressed by the SRO for Scotland related to whether the vaccine programme should be seen as a UK-wide programme. In terms of data strategy, at that stage the PM and SSHSC wanted to be in a position – by 24 December 2020 – to publish vaccination figures in the form of a single publication across the four nations. In the process of working this through after this exchange we

and DHSC agreed with the Scotland SRO's suggestion to use the Joint Biosecurity Centre for that purpose and that was implemented.

287. I have been asked to comment on my exchange with the DAs SROs on 16 December 2020 at page 4 of the SRO WhatsApp group in relation to a "tweet" by Nadhim Zahawi that contained preliminary vaccination figures broken down by nation. As is clear from that correspondence those were preliminary and unverified figures that were not intended for individual publication; they had been shared with the Secretary of State for the purpose of publishing an indicative overall UK figure. The publication of those figures, accordingly, put the statisticians and civil servants who had provided those figures in a difficult position. As is clear from that correspondence, Nadhim Zahawi recognised the problem and apologised. This incident did not have any impact on the subsequent sharing of confirmed vaccination figures between the four nations. The phrase "I will keep him out of the data" in that context reflected the understanding that preliminary and unverified vaccination figures from DAs should no longer be shared with Ministers.

288. I have been asked to comment on the description by the vaccine SRO for Scotland of public statements made by Pfizer/BioNTech as "unhelpful" in an exchange on 2 January 2021 at pages 8-9 of the SRO WhatsApp group. My recollection is that the public statements in question related to the JCVI advice to move to a 12-week gap between doses. As set out in that WhatsApp exchange, on that day I discussed the matter with Pfizer's UK Country Manager and Managing Director. He confirmed that Pfizer were not critical of the JCVI advice and Government's decision to move to a 12-week gap between vaccine doses (as certain media outlets had suggested) and that they had contacted a number of media outlets over the previous 24 hours to reinforce that position.

289. The WhatsApp exchange that followed discussed a separate New York Times article reporting that the UK had allowed the mixing of different vaccines. While the exchange indicates that there was some initial confusion as to the source of that article, there was agreement that chapter 14 of the Green Book (December 2020 version) made provision for the mixing of Covid-19 vaccines in a narrow set of exceptional circumstances:

> *"If the course is interrupted or delayed, it should be resumed using the same vaccine but the first dose should not be repeated. There is no evidence on the interchangeability of the COVID-19 vaccines although studies are underway.*

Therefore, every effort should be made to determine which vaccine the individual received and to complete with the same vaccine.

For individuals who started the schedule and who attend for vaccination at a site where the same vaccine is not available, or if the first product received is unknown, it is reasonable to offer one dose of the locally available product to complete the schedule. This option is preferred if the individual is likely to be at immediate high risk or is considered unlikely to attend again. In these circumstances, as both the vaccines are based on the spike protein, it is likely the second dose will help to boost the response to the first dose. For this reason, until additional information becomes available, further doses would not then be required".

290. I have been asked to comment on the exchange at page 11 from 4 to 5 January 2021 in relation to the Prime Minister's announcement of a target for vaccinating JCVI priority groups 1-4, and in particular the comments from the DA SROs that they had not received advance notice of the announcement. As I explained later that evening (page 12, messages sent at 9:30-9.31pm), the Secretary of State's office confirmed that they had shared the announcement with relevant DA Ministers and that the reason they had not heard it from me was because I had considered it appropriate for the message to go through official channels. Following that exchange we agreed to add the DHSC policy lead to the WhatsApp group in order to have a more direct line of communication between the DA SROs and DHSC.

291. I have been asked to consider the exchange at pages 13-17 (from 8 to 13 January 2021) in connection with the Vaccine Delivery Plan, where the DA SROs candidly shared their frustration and disagreement with the perceived failure by DHSC to give the DAs sufficient notice for providing their substantive input on the Vaccine Delivery Plan. As the Vaccine Delivery Plan was a DHSC document, I have nothing to add to that correspondence, which is largely self-explanatory.

292. I have been asked to provide more context to the message from the SRO for Scotland on 11 January 2021, which noted that "the politics of accusations relating to delivery being out of sync with supply in Scotland is proving to be challenging. This risks the strong partnership working between us all" and my subsequent phone call with the SRO from Scotland and my subsequent comment noting that "we may have lost our cohesion a bit". As stated in paragraph 284, this should be read in the context of the tone of this group overall. At the time there was intensive media speculation around

the match between supply into the UK and the number of vaccine doses delivered, with many stories negative about a perceived mismatch (that nations had more supply than we had all delivered). Everyone was feeling the pressure and this is reflected in my message – along with my desire to get ourselves back together so we could make the most of what we were all achieving.

293. I have also been asked to comment on my message from 13 January 2021 to the SRO for Scotland, which noted that we were surprised to see the supply figures in their report. The reason for this was that the Pfizer supply figures into the UK were commercially sensitive at that point in time. As is clear from that exchange, the SRO for Scotland noted that it would have been helpful to be able to refer to published information about supply particularly in the context of the stories mentioned in paragraph 292.

294. The WhatsApp exchanges from 22 February 2021 (page 22) relating to cohort 6 highlighted some of the difficulties that we encountered across the 4 nations in appropriately identifying individuals falling within the scope of this cohort, which was partly defined by reference to individuals between 16-64 with underlying health conditions which put them at higher risk of serious disease and mortality as well as the 'carers' of an elderly or disabled person. The number of people in this group was susceptible to change as individuals' circumstances, clinical guidance and diagnoses changed. There were also large numbers of unpaid, unknown carers to be considered in vaccination deployment. For that purpose, NHS England carried out work in close collaboration with Carers UK and DWP to encourage uptake by eligible people, whether or not they were recorded on existing records as a carer.

295. Lastly, I have been asked to comment on the WhatsApp messages at pages 28-30 (from 6-7 April 2021) in connection with the timing of the Moderna vaccine rollout. As set out in that exchange, some of the DAs had decided to start rolling out the Moderna vaccine on 7 April, ahead of the publication of the publication of the JCVI advice (which, I understand, was published later that day). As set out in that exchange I surprised by this decision simply because the 4 UK nations had thus far progressed on the basis on an understanding that the rollout of new vaccines should take place simultaneously across the 4 UK nations, after the publication of the JCVI advice. In this occasion some of the DAs decided to go out slightly earlier, for the reasons set out in that exchange.

DHSC

296. We tried as much as possible to have a 'one team' approach to working with DHSC. The vaccine policy team were invited to almost all of the programme's daily rhythm meetings. The policy team played a critical role in ensuring ministers, including SSHSC, were briefed on all key issues in a timely way, that liaison with JCVI and PHE was conducted appropriately, that when ministers needed to take decisions that they had thorough briefings. They also ensured that we had robust policy to support operations, and that operations was in line with policy.

297. We maintained these relationships through both formal and informal interactions. They were to all intents and purposes, part of the #oneteam within the vaccine deployment programme, while retaining the independence they needed to ensure governance was robust.

298. We worked closely with many other parts of DHSC, particularly the DCMO and his office, the social care team, Vaccines Minister Nadhim Zahawi and his team, the communications team, the SSHSC private office, the flu vaccine team, the permanent secretaries and the relevant DGs, particularly Clara Swinson.

299. In my view, this collegiality was essential to the safe and effective functioning of the programme, and did not interfere with robust discussion when needed to ensure difficult decisions were made with all views considered, for example on the introduction of mandatory vaccination for care home staff. In relation to the introduction of mandatory vaccination for care home staff, I was asked informally given there may have been an impact on vaccine delivery. I communicated my view orally that I felt that there is an intrinsic incentive to 'do the right thing' which can be lost if another incentive or requirement is added. Ultimately this was a policy decision for DHSC which was implemented through statutory regulations that took effect in November 2021. I describe this as a difficult decision as it raises issues as to the extent an individual has real choice in deciding whether to be vaccinated if required for the individual to continue their job. Additionally a large proportion of care home workers are from black and ethnic minorities that had lower uptake rates than the general population which indicated that requiring mandatory uptake for care home workers would conceivably lead to a reduction in care home workers generally as a proportion of workers, including BAME workers, might refuse the vaccination. The decision did not present a particular challenge to vaccine deployment generally given the policy took effect in

November 2021 and staff working in care homes were within the first cohorts for vaccinations that went live on 8 December 2020 however steps did need to be taken to ensure all relevant persons were identified and offered a vaccination.

VTF

300. We worked very closely with the VTF, particularly initially with Ruth Todd, Programme Director Vaccine Taskforce, and her commercial and operations team, and subsequently with Madeleine McTernan, Director General Vaccine Taskforce. For example, I was invited to Ruth's daily calls with the AZ and Pfizer vaccine teams in the lead up to launch, where she and her team helped solve operational issues with vaccine production and distribution.

301. Over the entire course of the programme, we worked closely with the supply team in the VTF, first with Ruth Todd as mentioned and then with Steve Glass who led the supply team. This was both formally through set piece meetings, through data sharing largely by email, and by informal WhatsApp when urgent areas came up.

302. The data sharing was critical to our supply planning as we kept our central stock of vaccine low (vaccines in arms, not in fridges), and so if a delivery arrived late from the manufacturers at the PHE warehouse that often had ramifications for our supply plans as outlined in the supply section above and in the CWS.

PHE

303. Much of the government's vaccine expertise and core approaches sat with PHE, and they formed a core part of the overall vaccine programme, including holding the vaccine for Wales and England when it arrived in the UK.

304. In particular, we worked closely with Mary Ramsay, who has been responsible for the national surveillance of vaccine preventable diseases since 1994 and since 2013 has also been responsible for the implementation of all vaccine programmes. Mary held the pen on the 'green book' which provided operational clinical guidance on how vaccine should be delivered. This book had to be updated each time a new vaccine was approved, or when changes were made to deployment. On several occasions, late changes to approaches meant Mary had to rewrite sections of the green book in very short time. She delivered every time.

305. I was always impressed by how much of a good vaccine response was embedded in PHE processes. For example, high on my list in November was to make sure that information about the vaccine was available to the public in multiple languages at vaccine sites. I asked my team to ensure this would be produced and available at sites. "It's already done," was the answer from PHE.

306. Mary formed part of the team in the (at peak times) daily discussions with SSHSC and was always on the end of a phone when I needed to check something. As with many of the other clinical leaders involved in the programme, she was always direct and sometimes challenging, but always working to ensure that recipients received vaccine safely and under regulations.

307. We also worked closely with the supply team in PHE, led by Gareth Thomas. Initially there were some tensions here, as for example the contractors who ran the PHE vaccine warehouse were not set up to work seven days a week which was difficult in the initial phase. But this was rapidly changed, and the ability again to pick up the phone and discuss difficulties was always there.

MHRA

308. MHRA had responsibility for authorisation of the vaccines – their safety and efficacy, and also the conditions of their deployment. Particularly around the approval of each vaccine, we worked closely together, but largely by them keeping me and the programme informed about likely timing of approval. We also presented our deployment model to them on 21 November 2020 to ensure it was safe, and so that they could include any specific conditions of deployment on the authorisation of the vaccine. The MHRA also oversaw any changes in vaccine specification, for example to authorise the six – rather than five – doses of Pfizer vaccine available in each vial.

309. The VDP supply and distribution team worked closely with MHRA subsequently on the packdown process – again, this was to ensure it was safe and that vaccine integrity would be maintained through the distribution chain.

310. Critical to ensuring we learnt from the vaccine deployment was the MHRA yellow card system, which was essential for pharmacovigilance. This system was a straightforward reporting of any adverse effects from vaccination. Any member of the public or clinical could submit a yellow card through the MHRA website, and the data was then assessed both by the MHRA and released publicly for further clinical review. It was this

yellow card reporting that led to the introduction of the 15 minute observation time after the Pfizer vaccine was given, after a discussion with CMO and PHE on the evening of 8 December 2020.

Local Government

311. From November, the programme held weekly sessions with local leaders, facilitated by DLUHC or by the social care team at DHSC depending on the group. We also met regularly with the 10 Metro Mayors, and the Local Government Association ("**LGA**"). In November I asked the lead of the LGA and other connections to find a local government CEO to join my leadership team so that we would have someone with that experience involved in our decision making every day. Eleanor Kelly, who was in the process of stepping down as the CEO of Southwark, joined the team on 18 January 2021.

312. In some of the difficult times where supply was seen to be being unfairly distributed in early January 2021, I held a couple of discussions with individual leaders to hear their perspective. It was striking to me that their optimisation principle was different from mine. An argument that said, "I know it feels as if you could go faster and we are withholding vaccine from you, but the challenge for is us that you have vaccinated all your over 80s while other councils still have a way to go, so that's why next week they will receive more vaccine," sounded very compelling to me but less so to a local leader who was almost exclusively focused on the needs of their population. It therefore helped to speak to local leaders as a larger group, so they could see they were not alone in having these challenges, and that there was not a systematic restriction or focus on one part of the country over another.

MOD/Army

313. 101 Log were an intrinsic part of the programme. Brigadier Prosser was effectively my COO day to day, and he embedded parts of his team in each aspect of our team. For example, we had a supply and logistics expert in the supply team, a nurse in the clinical team, planners in the programme management team, chiefs of staff supporting the different deployment models. We had a specialist mapping unit to aid with the planning and implementation of vaccination sites.

314. In addition to 101 Log, army clinical staff were deployed to act as vaccinators in many locations, particularly during 'surge' periods such as in response to the delta variant in Bolton, and the omicron surge in December 2021.

315. It was not just the expertise but the style and discipline of our army colleagues that enabled them to become an essential part of the team, and one we all learned a great deal from.

Judging the success of the programme

316. The English campaign delivered the fastest and most accurate vaccination programme globally as set out in the CWS and is widely regarded as a successful, well executed government-funded programme. The King's Fund publication "The Covid-19 vaccination programme – trials, tribulations and successes" **[EL/079 - INQ000283354]** referred to it as "one of the few almost unqualified successes of the United Kingdom's response to the Covid-19 pandemic".

317. The data from all other nations globally is not available in one source but a comparison of information held by 'our world in data' and other published comparisons, England achieved higher overall coverage faster, and with higher coverage in priority groups than in many other nations **[EL/072 - INQ000421406] [EL/073 - INQ000421405]**. Multiple factors contributed to our success, some internal to the programme, discussed elsewhere in this Statement, and some external.

318. All Covid-19 vaccination programmes globally experienced challenges and successes, and countries had different targets and delivery mechanisms. Many programmes that had challenges early on reached high levels of vaccination by amending their approaches, or when renewed public interest arose due to successive Covid-19 waves.

319. Whilst I cannot know all the reasons for difference, in discussions with officials and through research articles I have identified the following similarities and differences between the UK programme and those of some other nations. The UK started with two major external advantages. The first is a national health system, and the second is a relatively positive public confidence in vaccines.

320. Public confidence in vaccination is high in the UK. An international survey conducted by IPSOS Global Advisor between July and August 2020 showed that that 85% of the UK public either "strongly" or "somewhat" agreed to getting a Covid-19 vaccine, while

the number for the US population was 67% and for the French population was 59% **[EL/074 - INQ000421362]**. This effect can be seen in other vaccination programmes. For influenza for example the UK achieves among the highest rates of vaccination in the world.

321. By December 2020, and particularly when the announcement came on 23 December that families should not gather together for Christmas, the public was inclined to be supportive of a vaccination that would play a foundational role in being able to socialise, allow children to return safely to school, and generally allow the country to 'return to normal.' This support was reinforced over the next few months by the programme being seen to succeed, particularly after we hit our first major public target in February 2021.

322. People wanted the vaccination programme to succeed, and many people made personal contributions through volunteering to support its success. In this way we created a virtuous circle between the effort the programme put into mobilising the NHS and the public, and capitalising on the strength of feeling amongst the public about the need to support the NHS and vaccination. The more we provided opportunities to contribute and the more we did to try to meet the needs of local communities, the more traction the programme gained in local communities, which made it more attractive to support or contribute. These factors played out differently for other countries.

323. Other countries described two different types of challenge with lower public confidence in vaccination than in the UK. The first is starting from a lower level of confidence, as in the US (see above). The second – often related to the first – is where previous mass vaccination campaigns have had challenges, as with the roll out of the H1N1 vaccination campaign in France in 2009 – being then both a cause and a manifestation of a mistrust of public health messaging and in vaccination itself.

324. Countries starting Covid-19 vaccination with lower levels of vaccine confidence had to put more energy into other aspects of the 3Cs, including in the US for example which offered inducements to get vaccinated such as cash and college scholarship lotteries in Ohio, lottery tickets in New York, gun lotteries in West Virginia, and free beer in New Jersey. (Inducements feature in the SAGE 3 Cs model as part of 'convenience'). France, despite initially being concerned that mass vaccination would not be a good strategy given the failed H1N1 campaign in 2009, did look to open mass vaccination centres as they got into their programme to try and increase convenience for the population.

325. Countries which had low incidence of Covid-19 early in the pandemic, and where some groups therefore felt lower urgency to receive a vaccine – for example in Singapore, and in Australia and New Zealand – had more challenges to tackle complacency than in the UK. In Singapore, with a strong basis of public support for vaccines, and a strong supply early in the global roll out of vaccines (starting 30 December 2020), priority groups were quick to take the vaccine, but further uptake stalled later until cases and mortality started to rise again from July 2021. Singapore's campaign focused on the importance of vaccination to protect not just individuals but society as a whole, and, similarly to the UK, the public responded positively to vaccination as a way out of Covid-19 restrictions as well as in reducing the risk of morbidity and mortality.

326. We benefited from the successes of the VTF approach to securing a successful portfolio approach to vaccine supply. The speed with which these vaccines were developed, tested and launched globally meant there were substantial barriers still to overcome after launch with scaling up manufacturing, which in turn meant there was a strong element of 'first come first served' to the countries that were able to secure supply. The UK was in the fortunate position of being at the forefront of that group. Other countries did not have the funds to do so or were slower to conduct government procurements.

327. The first vaccine to be available globally – the Pfizer vaccine with which the UK started its programme – was not suitable for distribution in countries with high ambient temperatures and low levels of existing cold-chain distribution infrastructure, which made it unsuitable for many countries in Africa for example. It took development of the more stable and lower cost-per-dose AZ vaccine to make large scale vaccination possible in these areas.

328. The NHS itself was critical to the success of the UK programme.

    a. The brand. The NHS is one of the most recognisable and powerful brands in the UK. This provided a tremendous asset to the programme in that we could use people's connection to the NHS brand to attract volunteers and recruits to help with the programme. It also conveyed to recipients of the vaccine that the NHS – seen as safe – had confidence in the vaccine, and so they could too.

    b. The existing infrastructure. On both technology and on delivery channels, we were able to use what already existed. The use of Pinnacle and NIVs to record

vaccination events, the use of PCNs to group GPs together so that we had a 'scale' channel in primary care before we could pack down the Pfizer vaccine, the existing workforce and relationships within ICBs that allowed staff to be deployed across systems to deliver, the existing schools vaccination programme, the expertise of and relationship with PHE/UKHSA, and the existence of NHS England as a single body to hold the programme together all played a role. While some systems had aspects of existing infrastructure to leverage, one of the reasons why some other developed countries took longer to vaccinate at scale than expected – for example in Australia – was that it took longer to build the required systems than they had planned for.

c. The unitary set up. Other countries either had more complexity to manage in both supply chain and delivery models as health was devolved to states (for example in Sweden, Canada and the US), had no single data source to understand what was working and not working (as in the US), didn't have a single source of patient information and thus were reliant on individuals to come forward, and/or had to rely on broadcast, not personalised, invitations. It is notable that one of the very few programmes that went faster than the UK was Israel, which had the advantage of a national health system and integrated data systems. The reason they were able to go faster than the UK is that they had sufficient vaccine to be flexible about which groups they vaccinated at which time. While they started with the most vulnerable, they allowed sites to invite in those from other groups in order to keep every site at max capacity. Until June 2021 in the UK we did not have sufficient vaccine to take this approach.

329. While again I do not know the details of the programmes of most other nations, in my view what was special about the programme in England and critical to our success is as follows:

a. We worked together. The whole country mobilised to support their friends and communities to receive vaccination. This was seen in the number of volunteers who came forward locally, in the queues around the block to receive vaccination, in the number of people who asked to be part of the programme. Within the VDP itself we felt this as the #oneteam mobilised around our mission statement, but the strong message that we were not delivering alone came through in all aspects of the programme throughout.

b. We asked for help, and we received it. In my first week in the programme, as outlined above, I asked for help from supply chain experts, from the armed forces, from experts inside NHS England, from clinical leaders and from civil servants, among others. It is very unusual to lead a programme where almost no request was seen as unreasonable.

c. We were well funded. Although our business case was not agreed until the end of December 2020, we received sufficient funding to run the programme in the way we felt it needed, and the excellent finance team in the programme and in DHSC ensured we had rigorous financial discipline to show we could demonstrate value for money in all our decisions.

d. We used data to make good decisions, and we improved the data and how we used it so that we could make even better ones. The advances we made are now embedded across multiple NHS England and broader NHS and UKHSA programmes and reporting.

e. We were operationally excellent, and we saw constant improvement as an exciting challenge every day. No process is ever perfect, so we identified our priorities to fix, figured out what it would take to fix it, and then implemented wherever we could.

f. We listened to communities, and we adapted as far as we could to what they said they needed – at local, system and national level. There is always more we could have done, and we learnt a huge amount from what we did, but what we supported communities to do for each other made a huge difference to people's access to the vaccine, and in reducing morbidity and mortality in groups that had been disproportionately affected by the pandemic in its first year.

What was unusual or innovative

330. While we built as far as possible on existing infrastructure, a programme like this had never been done before. We therefore innovated extensively to meet our overall mission.

331. The extent to which something is innovative is, in my view, inherently subjective. In some cases it meant applying something that had worked well elsewhere to a new situation. In others it meant scaling something that one part of the system was doing at a speed or with intensity that we hadn't previously used. In others it was building

something entirely new, in others it was solving problems in new ways. Every part of the programme was thus innovative in some of what it did, and some of the time. Some of the examples which I think had the biggest impact on our overall achievements are given below.

332. On data, as mentioned above we learnt both from our own data and from studies conducted by academics using our data. In this we benefited from the efforts by NHS England's data team to share data more broadly during Covid-19. The NHS Covid-19 data store brought together data from operational, vaccination, registry, and sit-rep collections, as well as NHS data bases such as SUS and HES. This data store enabled researchers to link data sets and create longitudinal studies, including on uptake of vaccination and the effectiveness of different vaccines. In addition, NHS England supported the setup of OpenSAFELY which provided virtual access to GP data.

333. Using the right delivery model for the right community. As described above, the urgency to build capacity at scale, combined with the imperative to make the delivery convenient and confidence-enhancing for recipients, meant both the national programme and local systems were very innovative in what was used as a vaccination site. This ranged from major sports venues, hotels, libraries and empty shops, to churches and mosques, car parks and train stations at the 'large scale' level; to mobile sites such as buses and barges, pop-ups in markets, and individuals in cars and on bicycles visiting people in their homes as well as teams visiting groups of homeless people where they were. This included support to specific groups:

    a. Support to care homes. We were concerned to get the right model for care homes at the start of the programme as detailed elsewhere in this Statement. It needed to be speedy, safe for recipients, and safe in terms of vaccine transport and management. We built on the link that had been created earlier in the pandemic between care homes and their dedicated GPs to develop an approach that ensured every resident in all of our (then) 10809 adult care homes was offered a jab by 31 January 2021. Visits of GPs to care homes also helped with offering care home staff a vaccination, which was a key intervention to keep care home residents safe.

    b. For younger age groups who saw less personal risk in covid, key to the approach was making the vaccine convenient for them. We saw the benefits of local

flexibility here where, for example, the Exeter vaccination centre stayed open all night one weekend to catch students on the way home from bars and pubs.

334. On communications: trusted voices. Although the NHS regularly works with communities to develop and tailor services, we had not previously operated outreach at such scale. This included faith leaders speaking in support of vaccination and vaccinating in places of worship. We also had offers from celebrities to support vaccination publicly, which was important traction with specific groups – for example Gareth Southgate's support was effective with the younger age group who tended to be more complacent about the need for them to get vaccinated.

335. Using vaccination as a link to other health interventions. As part of our delivery location innovation, local systems took the initiative to link other health services to vaccination. At the Salt Hill vaccination centre in Slough, for example, a group of PCNs ran a joint vaccination site in a leisure centre, with one area dedicated to conducting heart checks as part of the offer. Some councils offered drop-in offers for their homeless population where visitors could also receive dental checks.

336. NBS and associated technology. This system was developed at pace to full operational launch on 9 January 2021 linked to the launch of vaccination centres. It allowed us to operate large centres efficiently and safely, and it allowed recipients to choose a time and place that was convenient for them. This system has since been extended to flu. In June 2021 we extended the website which hosted the NBS to include data on centres that had spare capacity in the coming days with our 'grab a jab' innovation.

337. #oneteam. I was clear from when I took over the programme that we all had to work as one. That meant the different parts of NHS England, the contractors and consultants working as part of our team, the vaccine policy team in DHSC and the comms team similarly, those running vaccination centres and GP vaccination locations, our volunteers, the supporters managing car parking or checking recipients in when they arrived, local authority leaders and their teams running programmes for the homeless, colleagues in DWP who helped us identify carers who needed to receive a vaccination as part of cohort six, and later the teams at DfE and the school immunisation teams. I have certainly missed other critical groups. My words to all our collaborators were – We've got the same goal. Don't shoot from the sidelines, come into the tent and tell us what we can do to be more effective. Largely, this worked. Everyone was so focused on doing the right thing for the country that although there were always difficult

conversations, these were largely conducted in a way that enabled us to improve and deliver more effectively together.

338. The #oneteam included volunteers, who were a key part of delivery. Through the first year of the programme around two million hours of volunteer time were used, and the programme could not have delivered without them. The NHS always has volunteers within it, but this scale level of operation had not been conducted before.

What would I do differently

339. There are some things I wish we had had in November 2020, which would have enabled us to go faster, sooner. I have not included things that are really 'pie in the sky' such as a vaccine available at scale that could be packed down in small amounts, or qualified translators able to place themselves in multiple vaccination clinics daily. These include:

    a. A national booking system

    b. Identification, via GP records or an ability to read across from working records to GP records, of protected characteristics as well as elements that put individuals more at risk of Covid-19 – in particular being an unpaid carer. A more consistent use of the race and ethnicity fields in the NHS PDS data would also have been helpful. A more 'live' version of the GP record so that periods of chemotherapy, for example, were always current when we pulled records for invitation

    c. A database of proven effective engagement and outreach approaches for underserved communities

    d. A complex but simple-to-understand supply chain, set up a in a customer-centric way, allowing tracking of deliveries and tailored ordering.

    e. A database of and working relationships with community leaders who are keen to engage in improving the health of their communities and open to working with the NHS to do so.

340. It is not reasonable to assume that several of these things could have been foreseen as needed any earlier than they were designed and created during the VDP. Now that we have created them, it's essential that we plan to maintain, extend and use these

innovations as inspiration to further improve our health services, particularly in immunisation and screening.

341. The matters above are those that I wish we had in November 2020 to enable us to go faster, sooner. I have been asked if there is anything else which could practicably have been done which might have improved delivery, or anything which, on reflection, might be done differently in the future to improve delivery. I have referred in other places within this Statement to matters which could have led to improved delivery but I am collating them here for ease of reference. I must stress that it wasn't necessarily practical to require these matters in November 2020 and so I am raising them to indicate how things might be done differently in future. Before I list those matters, I would also state that there will be differences in response to a future pandemic due to the different nature of the disease that causes the pandemic and different handling characteristics of any vaccine that might be developed to combat that disease. Matters include:

    a. streamlined governance arrangement from the outset that aligns to operational rhythms, delivers appropriate accountability and aids speedy decision making;

    b. having a "ready to stand up" sophisticated data management and capture and flow systems;

    c. having an up to date, pre-vetted list of volunteers that can contribute to the all the different activities needed for vaccinations, not just those with any clinical knowledge or experience but including those directing traffic, cleaning, parking, etc;

    d. having the ability from the outset to dispatch vaccines 24/7 from storage warehouses to individual vaccination sites;

    e. having a comprehensive list of carers, preferably linked to an NHS record;

    f. faster data reporting from school vaccination services.

342. NHS England has shown that it can learn from this, and build the learnings into core processes beyond the immediate teams involved in the VDP – for example, lung screening trucks have been deployed purposefully over the last two years in areas of high deprivation, resulting in those in areas of high deprivation now more likely than those in low deprivation to receive an early lung cancer diagnosis.

343. On data, we learned that while the NHS had – and has – the ability to analyse data from a clinical and demographic perspective, we could not conduct full risk stratification on data sets held by a number of disconnected government bodies. If we want to be able to fully analyse the effectiveness of initiatives against socio-economic factors, including employment, we have more work to do to analyse currently unconnected data sets. Of course this would need to be carefully managed to comply with legal safeguards on people's identity, as well as to ensure public trust, but in advance of another health challenge where linking these data sets would bring benefits for those in the UK, it is important the risks and benefits are appropriately mapped and managed.

344. The technology we developed is being extended and used as an inspiration for other services. The NBS is still in use during periods of Covid-19 vaccination, and the data platform we developed now holds information not just about Covid-19 vaccination but also flu, and is accessible to delivery sites as well as to national teams. As with some other parts of the Covid-19 response, we were perhaps too slow to share data across all relevant stakeholders, including for example local directors of public health, due to concerns about the robustness of the data and about data being leaked, our ability to cut the data appropriately, as well as formal constraints on data sharing. These were overcome during the programme and again, we would benefit from having agreed in advance of a crisis how data will be shared and having formal processes in place where these have not already been established.

345. The challenge will be persuading future governments that these innovations are worth preserving, and ensuring they are funded – which will be the most challenging issue in times where the need is not pressing. This is particularly the case for the supply chain expertise, management and creativity shown both in the VDP and in the PPE response. Before the pandemic we did not have this capability at scale in NHS England, and DHSC had outsourced management of the NHS supply chain in 2017. NHS SCCL is now a part of NHS England, although distribution remains an outsourced service. It is essential that we retain the knowledge and expertise to both run that outsourced service effectively, and have plans to build out our distribution at scale should it be needed.

346. What I would not do differently is to ask for help. I asked, and it came. Without the expertise and energy of everyone involved, we would not have succeeded. Specifically 101 Log Brigadier (now General) Prosser, Steve Gibb who led our supply chain work, my Chief of Staff Ellen Graham and later Harrison Carter and my private office team,

led by Jean Quinlan, Amy Bowen whose strategy team designed the pod model and Malcolm Reid who took over from her, Sue Harriman who held the programme together in its early stages, Mark Radford and Craig de Sousa who designed and ran the workforce approach, Michelle Kane who led our communications and engagement work, Dr Nikki Kanani who led on the clinical aspects of primary care and on inequalities, Ed Waller who designed much of the LVS model, Antonia Williams who led the DHSC policy team, Adrian Stanbury who led on tech, Emmi Poteliakhoff on data, Paula Clarke on Vaccination Centres, and Leaf Mobbs on Hospital hubs, Phil Heywood and Simon Currie on finance, Eleanor Kelly who provided our link to local government, Dr Jonathan Leach and Jennie Hall who led the clinical teams, Mark Angus who led our PMO, and the RDCs Robert Cornall, Rachel Pearce, Caroline Reid, Linda Charles-Ozuku, Alison Tonge, Mark Turner, and Catherine O'Connell and their teams who ensured everything worked in their local systems. This is a tiny part of the list of people who made this programme work. This really was a team of teams, and I'm immensely privileged to have been able to work to do something so important, with such brilliant support.

347. When I was interviewed outside the Science Museum at the end of March 2021 just after I'd received my first dose, I was asked what I felt. I had not prepped for the question, but I answered "I feel grateful". Experiencing the programme as a recipient rather than as a leader, I was able to fully immerse myself in what an extraordinary thing we'd put together. Clinicians, volunteers, site operational leaders had all done their bit to give me a brilliant – and incredibly speedy – experience in receiving a life-saving intervention. I was – and am – very grateful to all of them and to what they represented for the country.

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief of its truth.

Signed:

Personal Data

Dated: 8 August 2024