HOUSE OF COMMONS

Public Accounts Committee

Oral evidence: Covid-19: Planning for a vaccine, HC 930

Monday 11 January 2021

Ordered by the House of Commons to be published on 11 January 2021.

Watch the meeting

Members present: Meg Hillier (Chair); Gareth Bacon; Shaun Bailey; Olivia Blake; Sir Geoffrey Clifton-Brown; Dame Cheryl Gillan; Mr Richard Holden; James Wild.

Gareth Davies, Comptoller and Auditor General, National Audit Office, Lee Summerfield, Director, NAO, and Marius Gallaher, Alternate Treasury Officer of Accounts, HM Treasury, were in attendance. Questions 1-130

Witnesses

I: Kate Bingham, Former Chair, Vaccine Taskforce; Michael Brodie, Interim Chief Executive, Public Health England; Nick Elliott, Director General, Department for Business, Energy and Industrial Strategy; Dr Emily Lawson, Chief Commercial Officer, NHS England and NHS Improvement; Sarah Munby, Permanent Secretary, BEIS; Sir Simon Stevens, Chief Executive, NHSE&I; and Sir Chris Wormald, Permanent Secretary, Department of Health and Social Care.

HOUSE OF COMMONS

Report by the Comptroller and Auditor General

Investigation into preparations for potential COVID-19 vaccines (HC 1071)

Examination of witnesses

Witnesses: Kate Bingham, Michael Brodie, Nick Elliott, Dr Emily Lawson, Sarah Munby, Sir Simon Stevens and Sir Chris Wormald.

Q1 **Chair:** Welcome to the Public Accounts Committee on Monday 11 January 2021. This is our first hearing of 2021, and we are looking at the vitally important issue of the procurement and, of course, the roll-out of the vaccine. The UK has had a tremendous achievement in getting vaccines agreed and delivered in December and already being rolled out and given to people, but there are a lot of challenges in how the procurement took place, what will happen with the next rounds of procurement of these vaccines and in the future and, of course, the logistics of the roll-out.

It is a great triumph that as well as the Pfizer-BioNTech vaccine being approved on 2 December, the Oxford-AstraZeneca vaccine has since been approved—since this Report from the National Audit Office, which we are using as our launchpad for today's session. And we have a number of deals signed for five other vaccines, which are expected to provide around 267 million doses, at an expected cost of around £2.9 billion. Obviously, we are the Committee looking at value for money. We want to look at how this has happened, what has worked well, what lessons there are for Government and where there could possibly be improvements for the future.

Before we start, though, I want to bring in Sir Simon Stevens. Sir Simon, we are at the height of the very difficult second wave of the pandemic. Everything that everyone feared seems to be happening. Is there anything you would like to say before we go into the issue of vaccines?

Sir Simon Stevens: Thank you, Chair. You are right: obviously, we are going to spend this afternoon talking about the hope that vaccines represent, but in the meantime we are facing an incredibly serious situation. The chief medical officer, Chris Whitty, has again underlined that this morning. We have more than 30,000 severely ill coronavirus patients in hospitals across England. That is up by 13,000 just since Christmas day. In London, perhaps one in 30 people has the coronavirus; in parts of London, it may be twice that number. If you look across other regions of England, the issue is that coronavirus is once again on the rise. In Merseyside, for example, in just the last week there has been a further 50% increase in the number of covid hospitalisations. This is a very serious moment for the country and for the national health service. It is worth remembering that this affects all ages—a quarter of the covid admissions to hospital right now are for people aged under 55—so it is something that we all have to take extremely seriously.

Q2 **Chair:** Thank you, Sir Simon. Could you convey thanks, on behalf of the

Committee, to the thousands of NHS staff and contractors who are working so hard under such pressure to support us all? We would like to pass on enormous thanks to them.

Sir Simon Stevens: Thank you for that, Chair, but I think my colleagues would say that the biggest collective and individual thanks that we could give to the nurse in critical care, the doctor in intensive care medicine or the paramedic responding is to stay at home and not put ourselves and other people at risk through transmission. We now know how this virus spreads, and in many parts of the country it is spreading out of control.

Q3 **Chair:** Thank you very much, Sir Simon. I certainly know that in my part of north-east London, one in 20 people has coronavirus, so it is obviously a very serious matter.

I would like to formally introduce our witnesses. We have just heard from Sir Simon Stephens, the chief executive of NHSE&I. We also welcome Sir Chris Wormald, the permanent secretary at the Department for Health and Social Care, which is responsible for a lot of the strategy around the vaccine, and Sarah Munby, the permanent secretary at the Department for Business, Energy and Industrial Strategy, which is responsible overall for the procurement of vaccines. Michael Brodie is the chief executive of Public Health England, which is of course a key player in all this. Kate Bingham was appointed chair of the Vaccine Taskforce by the Prime Minister in April—she is no longer chair of the Taskforce—and we will probe that role later on. Nick Elliott is the senior responsible owner for the Vaccine Taskforce and director general at the Department for Business, Energy and Industrial Strategy. Dr Emily Lawson, who we are very pleased to see, is the chief commercial officer for NHS England and NHS Improvement, and was the senior responsible owner for PPE procurement as well as for vaccines. You are a very busy woman, Dr Lawson, so we look forward to hearing from you, and I am pleased to have you before the Committee.

To start, I will come back to you, Sir Simon, on the roll-out of the vaccine and how quickly it can realistically be rolled out. We have had a lot of optimistic messages from Ministers and others, and we have talked to the people on the ground who are dealing with this in our constituencies and around the country. Do you think that the timeframe is realistic, and what is your estimate for how fast you can reach the key groups that are currently on the priority list?

Sir Simon Stevens: Again, an enormous thank you to colleagues across the health service, as well as to our partners in the Army, Public Health England, St John Ambulance, the Royal Voluntary Service and local authorities, all of whom are coming together in this huge team effort to mobilise for what will be the fastest vaccination roll-out in our history.

This afternoon, we have published the data for this past week, which will now be updated daily, and I am pleased to say that it shows another very significant acceleration in the number of vaccinations given last week. Over

the first three weeks of the programme, as supply of the first of the vaccinations, from Pfizer, came online, we were able to administer around

1.1 million doses across the country. We have doubled that in this last week. The speed of vaccinations has tripled over the course of the last week, with another 1.2 million jabs given, which means that the total number of jabs for England has now reached 2.3 million, and for the United Kingdom, it is over two and a half million.

I think that augurs well for the further acceleration that we will see in the coming weeks, as we head towards the mid-February goal of having offered vaccination to everybody aged 70 and over, as well as to people in care homes and the clinically extremely vulnerable, and the health and social care staff looking after them.

Q4 **Chair:** Okay, but the target in the next month, between now and midFebruary, is around 13 million. We have done 2.5 million, which is an achievement—let us not decry it; I would not decry it—but there is still a lot to do. Can you just give us some examples of how you are actually getting that logistical exercise going on the ground, because the evidence that we have had, from GPs among others, is that they are confused about the communication and have no certainty about the delivery of the vaccine, the timing of which is very critical? Can you give them and us some reassurance that the logistical supply chain is being smoothed and will deliver, because it is a very big task ahead?

Sir Simon Stevens: Yes, and you are right—it is a huge task. As I say, I think that the proof of the ramp-up is in the over a million extra vaccinations that have been delivered over the last week, and there will be more this coming week.

If the question behind the question is, "How is that happening?", it is happening as a consequence of three things. First of all, supply is becoming available to us on a phased basis. It was only last week, of course, that we were able to start using the new Oxford-AstraZeneca vaccine alongside the Pfizer-BioNTech vaccine. I have to say that the Vaccine Taskforce at BEIS has done a fantastic job in sourcing vaccines for this country and for the NHS. So the first thing is increasing supply.

The second thing is then increasing the number of places where we are able to administer a vaccination. You have seen a steady expansion in the number of them—local vaccination services, the hospital hubs—and now, today, the wider-scale vaccination centres are coming online as an additional option. The vaccination plan that the Government are publishing later this afternoon will set all of that out.

Then, the third piece of it is that as we have got more supply and more places, then we ought to have more people doing vaccinating, and we have had a fantastic response from people currently in the service but also from those willing to volunteer to come back and help, such that we do not think

that workforce will be a constraint on vaccine administration between now and mid-February.

However, I will just say, Chair, that this process is, if you like, in three phases. This is a sprint to mid-February; then, it will be a sprint from midFebruary through to the end of April, to extend the vaccination to the rest of the higher-risk groups identified by the Joint Committee on Vaccination and Immunisation; and then there will be a marathon from April through the summer into the autumn, as the Secretary of State for Health and Social Care has said, whereby we will be offering that jab everybody in the country who wants it over the age of 18 for whom the vaccine jabs are authorised.

So we have got what we need to do in the next five weeks; we have got what we need to do from then to April; and then—

Q5 **Chair:** Okay, so we have got that. What do you need from the rest of the system to make sure that the NHS is able to meet these hugely stretching targets, given that the virus, as you say and as we know, is rampant right now, that it is running through and that we probably will not be rid of it by the end of the year? Can you realistically guarantee, with what you need in place, that you will be able to roll this out to all over-18s by the end of 2021?

Sir Simon Stevens: That is absolutely the goal that we have, and we think it is a feasible goal. Obviously, it depends on continuing vaccine supply throughout the course of the calendar year, but, as the NAO Report lays out, the Vaccine Taskforce has done a fantastic job of sourcing millions of doses—tens of millions of doses, hundreds of millions of doses—over the course of this calendar year. There may be some uncertainty as to exactly which week or which month some of them arrive, but in aggregate we ought to be well served for the amount of vaccines available in this country over the course of 2021.

Q6 **Chair:** Okay. So you are confident that by the end of this year we will see that that target reached, just in simple terms—yes?

Sir Simon Stevens: The offer. I mean, obviously this is a—

Chair: Sorry—the offer, yes. We can't force people to take them, but the offer.

Sir Simon Stevens: Yes.

Q7 **Chair:** Okay. Just in terms of prioritisation, obviously there is a very clear prioritisation of people on clinical need first; I think we understand that. But interestingly, there has been some discussion about changing that prioritisation. Dr Whitty was on air today saying that there might need to be a discussion, once you have gone through those most vulnerable groups, about prioritising people, for example, at the frontline in certain key services, in education, maybe in transport, in supermarkets—whatever. Are you involved in those discussions, and have you got any thoughts that you would like to share about that before we move on to Dame Cheryl?

Sir Simon Stevens: As you perhaps imply, Chair, those are decisions that are for Ministers on the advice of the independent expert committee, the JCVI—the Joint Committee on Vaccination and Immunisation. They set out very clearly their logic for the first one to nine priority groups, but I think that there is a strong case, particularly in respect of teachers and other key workers, once the first high-priority groups have been vaccinated, for asking the JCVI to consider specifically those groups.

Q8 **Chair:** We are going to look in a little more detail later at the gap between the first and second jabs. Of the 2.5 million that have been issued so far—announced with great fanfare today, and good on it so far—are they all first jabs? How many are second jabs?

Sir Simon Stevens: The vast majority of those are first jabs—1.96 million—but there were some second jabs, where there was a clinical decision to do so, given that last week was only a few days after the changed advice from the JCVI and chief medical officers.

Q9 **Chair:** Just over 0.5 million are second jabs.

Sir Simon Stevens: No, for England it is 374,613.

Chair: Okay. I will bring in Dame Cheryl—

Sir Chris Wormald: Before you do, Chair, may I come in on the prioritisation question? It is of course, as Simon said, a question for Government. As he rightly said, there are decisions to be taken on that subject when we get to the end of the JCVI prioritisation list.

It is important to note that we need to know more about some things to do with the vaccines before some of those decisions are taken. In particular, and Professor Whitty has discussed both of these, we need to know more about the extent to which the vaccines stop the transmission of the virus, as well as stop people getting sick, and about how long the protection is that the vaccine gives. So not only do we have decisions to take, but we need more data to build up, in order to inform those decisions. Obviously, the Government will take those decisions at the appropriate moment.

Q10 **Chair:** Thank you, Sir Chris. Do you know what the timetable for that is, because it is pretty critical? There is evidence that people who had been vaccinated are testing positive, although in very small numbers. Do you know what the timetable is?

Sir Chris Wormald: This is being studied all the time and, obviously, the more we use the vaccines, the more we learn about them via the surveillance systems that we have, so there is not a cut-off date. We will learn more and more, and when we are clear in terms of the initial plan—I think that the Government have just published their written version of the vaccines roll-out plan—we will be taking decisions at that point, but I could not put a date on it right now.

Chair: I should let people know that that has been published, just as we were going into our Committee meeting, so as a Committee we have not read it. I will now go to Dame Cheryl Gillan.

Q11 **Dame Cheryl Gillan:** Thanks, Chair. Sir Simon, I have a couple of questions that are concerning people at the top of this session. First, an alarming report to read was about a person who called on a house, charged money and gave what amounted to a—we hope—harmless injection to someone. It was a false matter. Also with the security of the vaccines themselves, are you satisfied that you have suitable security arrangements in place, so that we will not see a repeat of that terrible incident with that individual? Are all the supplies of vaccines secure?

Sir Simon Stevens: Perhaps, Dame Cheryl, I will take that in the two parts that you set out. On the second part of the question, the security of the supply chain, yes, I think that colleagues in Public Health England—Dr Emily Lawson may want to come in on this as well—have reasonable assurance on that point. There is a trade-off here between the transparency that everyone wants to see—about the way in which vaccines are stored, how they move around the country, when an individual new location is coming on line and so forth—and the opportunity that that then presents to malign actors in respect of supplies. Emily may want to come in on that.

On the first point, you are quite right that there needs to be great vigilance on this. This is ultimately a matter for the police and the Home Office. It may be that Chris Wormald also wants to comment on that. I don't know if Emily wants to talk about security of the supply chain without inadvertently revealing too much about the way in which we are securing the supply chain.

Dr Lawson: The security of the entire supply chain has been very much on the minds of both the Vaccine Taskforce to start off with and the deployment programme now. There is cross-supply-chain security support, comprising the agencies that you would expect to be involved. It is led out of the Home Office and it reports into the deployment team. At the deployment board, in all the programme meetings that we have every morning, it looks at operations and provides advice on that basis. It has looked at security of individual sites and is obviously looking at the security of the transport of the vaccine. That is one of the reasons why some of that information has not been shared and televised.

It is also the reason why there have been checks on people who volunteer in the programme to make sure that people are volunteering on the right basis and that all the sites involved can assure themselves about the people

arriving. There are weekly briefings on that from the services to make sure we are aware of any threats. In particular, we want to secure vials and so on for the kind of reasons you outlined. It is very much on the mind of the programme and is something that we look at every day.

Michael Brodie: I wanted to say, from the central storage, PHE perspective, that we have had audits from the Centre for the Protection of National Infrastructure and the National Cyber Security Centre. They have looked at the physical infrastructure and security, and at the technology, and we have implemented all the recommendations from those two organisations.

Q12 **Dame Cheryl Gillan:** That is good to know, because it is necessary to reassure the public that we are not being secretive about the supplies of vaccines. This is a matter of national security and there are malign actors, as Sir Simon said.

My other points, Sir Simon, are on matters that have been raised with me, which I think are of concern to people around the country. First, a lot of people have been getting letters sending them to mass vaccination centres that are not close to where they live, and they want to know whether they can go locally. The advice that is being given locally is to wait until your GP contacts you. Could you confirm that that is correct?

The other point is that, on the priority for the people receiving it, I have had concerned constituents asking about relatives who are young but are about to start cancer treatment or chemotherapy. They are very concerned that they have not been called to have the vaccine and been allowed to jump the queue because of their age, because of the very strict guidelines that have been set down. I wonder whether you can address those two points for me.

Sir Simon Stevens: Certainly, yes. On the first point, the larger-scale vaccination centres are simply an additional option that some people may choose to avail themselves of, but they will also be getting an invitation from their local GP service for a more convenient vaccination if they would prefer that.

There has obviously been a discussion about how we get the balance right between the scale efficiencies of running some of these larger operations that can do many hundreds of vaccines each day and the local convenience that you need for maximum penetration and maximum uptake of the vaccine. In effect, we are trying to do both. We want to be completely clear that the letters that people are receiving—we will make sure the text says this very clearly—say, "This is an additional option, but if that is not convenient for you, don't worry. You will get another offer within the next five weeks for a convenient local service. And, by the way, if you are housebound, we will arrange for somebody to come and give you the vaccination at home if that is required."

On your second point, Dame Cheryl, I think we have to defer to the JCVI and the chief medical officers. They have looked at the point that you raised. There is some flexibility for exceptional individual circumstances where clinicians can make that choice, but overall their recommendation was that the risk corresponds very greatly to age, and therefore applying this age-based determination is what we in the health service have been instructed to do.

Q13 **Dame Cheryl Gillan:** Should anybody in that situation contact their clinician and ask for advice directly?

Sir Simon Stevens: That is not the recommendation of the JCVI and the chief medical officers, no.

Q14 **Dame Cheryl Gillan:** So what do I tell them? They are asking me for advice, and I am not clinically trained.

Sir Simon Stevens: We just have to say that the ask that has been made of the health service is to proceed with the vaccination priorities, calling people in, and that we are doing that, starting with the over-80s and care home residents and working our way down. It is not currently the recommendation that people should be vaccinated outwith those initial four groups between now and 15 February.

Q15 **Dame Cheryl Gillan:** Could you take that specific case away for me? I don't think that is a satisfactory response for my constituent or anybody who is starting chemotherapy and is of a younger age group. I think it will cause a great deal of concern, and I would very much like it if you would take it away and see whether that could be changed.

Sir Simon Stevens: I am more than happy to raise the point directly with Chris Whitty, absolutely, but ultimately it is a set of clinical decisions that the health service is asked to give effect to, so it would be for the chief medical officers and for the JCVI to decide whether to do something different from what they have currently told us to do. I don't know whether Chris Wormald wants to come in on that one.

Dame Cheryl Gillan: I trust you to take that away and come back to me personally.

Chair: I think in the document that was published as we started this Committee meeting there were some changes to, or clarifications of, the prioritisation, so we may find that that has overtaken the questioning. I am are now going to turn to Sir Geoffrey Clifton-Brown.

Q16 **Sir Geoffrey Clifton-Brown:** Happy new year to all our witnesses. Sir Simon, may I ask you one or two macro questions? First, the Prime Minister in his broadcast introducing the lockdown said that if all went well, the first four priority groups would be vaccinated by the middle of February. Is that still on course?

Sir Simon Stevens: Yes, it is on course and the aim is to have been able to offer everybody in those first four groups an appointment by 15 February.

Q17 **Sir Geoffrey Clifton-Brown:** May I clear up the total number of people you expect to vaccinate? The report has different views on this. At one point, it says your Department wants to vaccinate everybody, at another point it says we need to vaccinate 70% of the population and at another point it says that we need to vaccinate 25 million people. How many people do you intend to vaccinate or offer the vaccination to?

Sir Simon Stevens: Within the first four priority groups in England there are an estimated 12.2 million people. We aim to offer all 12.2 million people a vaccination before 15 February. How many of them choose to take up the offer will obviously reveal itself with each successive day and week. The central expectation is that around three quarters of people may do so, but we believe it could be higher, given that in this year's flu jab season we have seen around 80% of people aged 65 and over choosing to accept the flu jab, up by about 10 percentage points on last year. The point is that there is enough vaccine, provided that supply carries on coming onstream as we expect it to, so that if all 12.2 million people say yes, we can jab all 12.2 million people. If, on the other hand, some do not—as, of course, in the real world is likely—then that is vaccine that we can use for other people.

Then, just to clarify the 25 million number that you referred to, which is mentioned in the NAO Report, that is not now the number that we expect to be vaccinated during calendar year 2021; it is the estimated number of people who are in the full JCVI risk pyramid categories 1 through 9. In other words, it is everybody aged 50 and above as well as the clinically extremely vulnerable. We aim to be able to offer that group by late spring, assuming that vaccine supply carries on, and then all the rest of the country, the other 17.7 million adults in England, during the balance of the year. Does that clarify it?

Q18 **Sir Geoffrey Clifton-Brown:** It does, thank you very much. The rate of vaccination—again, you will have intelligence on this—will no doubt depend on the supply of vaccines. The Prime Minister originally said that he wanted a vaccine rate of 2 million a week. He now says that he hopes we will have 13 million vaccinated by mid-February. That is stepping up a bit from the 2 million a week. Taking the previous answer, how long do you realistically think the first category 9 lot will take, and how long do you realistically think that the vaccination programme will take through '21 to get all of those that really want the vaccination vaccinated?

Chair: We have covered some of this already, but Sir Simon can give us a quick recap.

Sir Simon Stevens: It is a very good question. As I have said, we have got two sprints and a marathon. We have got a sprint now to 15 February for the first 12.2 million people—

Chair: We have covered that point. I think Sir Geoffrey had problems connecting before.

Sir Geoffrey Clifton-Brown: I am sorry, Chair. If you have covered it, don't worry.

Q19 **Chair:** What about the other points?

Sir Simon Stevens: The Health Secretary said by the autumn. Matt Hancock has said that by the autumn we hope to be able to offer the vaccine to everybody in the country who wants one.

Sir Geoffrey Clifton-Brown: That is very helpful. Thank you.

Q20 **Mr Holden:** One thing that is concerning my constituents, and I am sure those in other parts of the country, is the localised data. Will we get localised breakdowns of data on how many vaccines are going out?

Sir Simon Stevens: Yes, we will.

Chair: When?

Q21 **Mr Holden:** And how localised will they be? Will they be on a CCG, county or constituency basis? Can you tell us any more?

Sir Simon Stevens: Sure. We will do a regional split by the STP/ICS areas, and then we aim to do a split at local authority level as well if we are able to. We aim to do that within the next week or 10 days so that people can see how their own uptake is going. If I might say so, this underlines the important role that local authorities and indeed directors of public health will have in the programme—not in calling people in, because this is an invite programme so that we can do it on a phased basis, but in helping ensure that when people do get an invitation, we see good uptake, including in groups who might traditionally have had a lower vaccine willingness or uptake.

Q22 **Mr Holden:** I understand that. So we have got the 13 million in the first wave up to the middle of February and then 17 million in the second wave—roughly—nationwide. Are we expecting the speed of the second— you mentioned two sprints—to be quicker than the first, because we will have higher production of the vaccine by that point?

Sir Simon Stevens: Our aim, as the three phases unfold, is to be able to vaccinate each month in line with the vaccines we have got that month. As we might come on to discuss, given the fantastic work that is being done to procure vaccines, we should have a lot more by spring than we have now, and we will have more in the summer than we have in the spring. So, yes, we would expect the vaccination rate to increase as supply increases, and in turn, therefore, to use many more partners to do that. Retail pharmacists will come into their own when we have got all the vaccine supply that we can put in their hands.

Q23 **Mr Holden:** So just to be clear, we can expect those national breakdowns of the vaccines from today, and then within the next week to 10 days the localised data that we asked for.

Sir Simon Stevens: Correct.

Mr Holden: Chair, do you want me to move on to allow Sir Simon to fix his connection?

Chair: Go on to the point that he needs to answer next. We have problems with your sound, Sir Simon, which we will sort out behind the scenes.

Q24 **Mr Holden:** Sir Simon, we have seen a huge update in the treatment recently. I have had some questions locally about the use of vitamin C and vitamin D. Is that something that you are rolling out alongside the other treatments? I believe there was a pilot at a Newcastle hospital.

Sir Simon Stevens: Let me give you a specific note on the vitamin D question, because that has periodically cropped up and trials are under way. Obviously, the new news on treatments this past week has been the repurposing of two rheumatoid arthritis drugs that have cut the relative risk of death in intensive care by 24%.

Chair: We followed that. Sir Simon, there is a problem with your sound. There is a back channel trying to contact you about that.

Sir Simon Stevens: Shall I dial off and dial back in?

Chair: If you can keep an eye on the back channel, we are going to drop you for a moment and go back to Mr Richard Holden.

Q25 **Mr Holden:** If I could ask Ms Bingham, please? There have been a lot of questions in the press around the EU, and whether we were right to be part of that vaccine programme. Do we now know that it was the right decision to definitely not be part of the EU programme? How far are we in advance of that EU programme, and where would we be in comparison?

Kate Bingham: We talked about this in our report that was published in December. The conditions that the EU set to allow us to participate were conditions we felt were not attractive. We were not able to join any decision making on which vaccines; we had to abandon the negotiations we either had under way or had concluded with AZ; and we also were not able to talk to future potential vaccine companies that they may not be talking to currently, but would do in the future. We felt the conditions were too tight, and that we would be able to act more quickly if we did it independently.

Equally, we remained very close and supportive, and continued discussions throughout to help them with their decision making and anything else that we could do. We just thought it was a better approach for us, and I think with hindsight that was the right decision, because we were able to secure the vaccines quicker and start vaccinating more quickly.

Q26 **Mr Holden:** Indeed. In terms of speed, then, how much quicker do you think the UK is going to get that roll-out, particularly for those vulnerable groups, compared with our friends in the EU?

Kate Bingham: Part of the reason for acting quickly was so that we could give the NHS teams time to prepare. Of course, we did not know which of any of these vaccines was going to work, and we did know that the mRNA vaccines have a highly complex, challenging supply chain with the short stability and minus 70° cold chain, so the longer the teams have to prepare, the quicker they will be able to roll out when the vaccine is available.

I think that has played out. If you look at the stats, you can see what has happened in France, Germany and the Netherlands, and I think our team has done phenomenally well. The feedback I get from the mRNA companies is that they are highly organised, incredibly co-operative and supportive, and have formed an incredibly strong team, so I would absolutely like to call out my thanks for the amazing work done by Emily and the team.

Chair: I think we are going to come to that a little later on. Mr Holden?

Q27 **Mr Holden:** There was just one final question on that. Would you say, Ms Bingham, that we are a couple of months ahead of our European counterparts on this roll-out programme because we took a different approach?

Kate Bingham: Probably. I am not privy to the details now—I read the headlines like you do—but I do know that we have certainly had plenty more time to prepare for it, and therefore we should be doing it.

Mr Holden: Thank you very much indeed. We all know that every 250 injections, particularly for the elderly age group, is really helping to protect life.

Chair: We are going to move on to the main session now. This is really using the NAO Report—thank you to them—as a launchpad for our work, but obviously we are going to go a bit further as well. I am going to ask Richard Holden to take the floor once again.

Q28 **Mr Holden:** Thank you very much, Chair. We are now going to drill down a bit, Ms Bingham, into the taxpayers' interest element of this, because a huge amount of taxpayers' money has been spent here: about £2.9 billion on the vaccines themselves, and a much larger amount on the vaccine roll-out programme. First, obviously, we started buying vaccines before knowing whether they were safe and effective, so how on earth did you manage to decide which contracts you would go for and which would provide best value for money?

Kate Bingham: The starting point was to assemble a team of experts. As I have said, I am a therapeutic expert, not a vaccine expert; the distinction is whether people actually have a disease, or whether they are healthy. In the case of vaccines, we are vaccinating healthy people. I pulled together a team of people who are clinical, pre-clinical, regulatory and manufacturing

experts who could help both triage the landscape of the different vaccine candidates, and then perform the detailed work that we needed to assess the different characteristics of those different candidates.

The first criterion we used was whether they were sufficiently advanced to allow entry into the clinic in 2020, and if possible, approval in 2020. Our focus was very much on securing the most promising vaccines for the earliest possible deployment in the UK. The first was about speed; the second was about the data itself that would support their ability to immunise and protect those who are most at risk. That meant we needed to be convinced that these vaccines could work in the elderly. We also needed to be sure that we could make them, so that they could be scaled to the level where we could protect all those who need it in the UK.

Those were the criteria that we used for triaging the different vaccine candidates that were out there and, of course, we have relationships. I have been in the industry for 30 years. All the western companies that we evaluated were companies where we had prior relationships, in some way, between at least one member of the team and those companies.

It meant that we were able to have meetings in evenings, on Saturdays and at weekends, and move things forward very quickly, because we had a level of understanding and trust, both with the companies that we did end up securing contracts with, as well as ones that we didn't. If I take you back to May, which is when we started, there was no evidence that any of these vaccines would work.

Mr Holden: Indeed.

Kate Bingham: So our portfolio strategy was one that we wanted to optimise the chances of success, so that if any of these different formats would work, we had access to the most promising vaccine in that format.

Q29 **Mr Holden:** Okay, so speed was the issue. What premium were we paying on that speed? Obviously, we were looking at 270 million doses, give or take, and £2.9 billion. We were looking at £10 a dose. What is the price differential between the different vaccines?

Kate Bingham: The mRNA vaccines are more expensive than the adenobased vaccines, and the phage adjuvants and the whole inactivated virus vaccines are roughly in the middle. The challenge is that when we are negotiating, everyone is using the data that they have got at the time. Of course, none of these vaccine companies, at that point, had scaled up the manufacturing, so they did not know what their actual costs would be. We struck deals so that we had firm pricing and, in some cases, options for further vaccines, but it could not have been a discussion about premium because nobody knew what the actual costs were going to be.

Nick, do you want to pick up on any of that?

Nick Elliott: That is exactly right. We didn't pay premiums for the access, because people didn't know what the cost was going to be. What we did was

negotiate quickly and early. We got into contracts early, so we had heads of terms set up initially, and then supply agreements, and we built confidence and trust with the suppliers that allowed us to pursue those negotiations at pace. I think there was only one of our portfolio of vaccines where we offered a slightly higher premium—a very small premium—to get early access in 2020, but other than that it is the position as Kate has just outlined.

Kate Bingham: And I will just point out that we secured the first contract with Pfizer-BioNTech, which was the first vaccine to get regulatory approval in any western country. We did that because we were quick and nimble. We were clearly not the largest buyer. The US and the European Union are much more substantial buyers than the UK, yet we were both the first to secure the contract and the first to deploy.

Q30 **Mr Holden:** Quite frankly, I am slightly astonished that you didn't have to pay a premium, given that we aren't the largest buyer out there. Actually, every month that goes by is billions of pounds for the economy. You were saying that we have to pay this money anyway, so in getting the economy moving again there is a naturally a huge benefit in getting the supplies out early.

Moving on to the second point, we know that you were going in blind but trying to negotiate the best you possibly could. How did you determine the dose numbers of the different vaccines, Ms Bingham? There are a wide variety—7 million for the Moderna up to 100 million for AstraZeneca. Why did you go for those different numbers?

Kate Bingham: Of course. The first thing we did was to talk to JCVI and ask them what numbers we should be using as our assumptions for the numbers of people who they were going to recommend for vaccination. Their advice to us, right at the beginning, was 30 million people—that's the groups 1 through 9 that they have since discussed. So, that was our benchmark number. In some cases, if they are two-dose vaccines, then it is obviously twice as many—60 million doses.

In the case of BioNTech, we got as much as we could for that supply, which is now 40 million doses as opposed to 60 million. That is phased. The reason the Moderna number is lower—we could have got the full amount—is because the supply timing was going to be too late. Because, in Moderna's case, they prioritised manufacturing in the US ahead of Europe, as it is a US company, their European supply was not going to come online for at least a quarter after the time at which the US supply would come online. That captures all of them except for the AZ. The AZ number assumes vaccination of the full population. That number was defined before the VTF was formally set up. That is, basically, for 50 million people.

Q31 **Mr Holden:** I suppose two questions follow on from that, Ms Bingham. Given that we now potentially have around 270 million doses, do we expect to go back to buy more from any of the other suppliers or do we think that these contracts are sufficient for what we need in the UK, particularly in terms of speed?

Kate Bingham: The number of doses that are talked about in the NAO Report only refer to the contracts that have been finally signed. We have actually signed LOIs for two more, so we have 357 million doses. We also have scope to have options on some of those. The answer is that we have more doses than we are likely to need, if they all work. When we were signing the contracts, we did not know whether that was going to be the case.

Q32 **Mr Holden:** I can understand that. With those extra doses, what happens? Are we bound into contracts on these, which we may no longer need? What will do with the extra supply chain there, if we are managing to vaccinate more rapidly than others?

Nick Elliott: Thank you very much, Mr Holden. I have a point of clarification, because things move very fast in the Vaccine Taskforce world. Since Kate has been gone, we are up to 367 million doses, because we secured another 10 million doses of the Moderna vaccine. The reason that we went for those additional ones is that we were able to secure them at an earlier time than we thought we were going to be able to get them. That is another contingency option for us.

In terms of what we do with those doses, it is too early to say. First, we do not know whether we will see the follow-on vaccines come through clinical trial and be successfully approved for use. Secondly, we have to see what happens with the roll-out. There are always potential challenges to what happens with the roll-out. We have tried to ensure that we have as much flexibility in each of the contracts, to allow us to not take those vaccines or look at alternative disposal options. COVAX and the exchange mechanism in the international COVAX facility would be one of the options that we have there.

Kate Bingham: Can I just add one more thing? We also secured a deal with a Scottish company called Valneva. This is a whole inactivated viral vaccine. It is in the clinic now, but it will not be ready before the second half of next year. We did that, especially given the news about the mutations that we are seeing in the SARS-CoV-2 virus, because with a whole inactivated virus you have a much broader real estate of viral proteins against which the immune system can generate antibodies and cellular responses. For us, this is a tried, tested and proven vaccine platform with a much broader range of immune response. It is unlikely that any viral mutations would escape a whole inactivated virus. That is why we have included that as part of our portfolio.

Q33 **Mr Holden:** Ms Bingham, thank you very much for that. That brings me neatly on to my next question, which I will direct to Ms Munby, the permanent secretary at BEIS. One implication of this is that we will be looking, potentially, at an annual vaccination programme. Are we now looking at that in terms of this?

Sarah Munby: Of course, we are absolutely thinking about the fact that annual vaccinations may be required. It is too early to say whether they will

be or not. We have plenty of doses to be getting on with, not only for this year, but likely for next year as well. We do not have an urgent and critical question about annual vaccinations, just to be clear. In that case, we will have the luxury of being able to take a little bit more time to survey the field. This time around, we could not compare a set of vaccines against a clear set of criteria, because information was shifting all the time. That approach will be more applicable to any future annual vaccination programme.

Q34 **Mr Holden:** On that potential future programme, Ms Munby, what has been done to ensure future access to supply, to protect taxpayers from potential price increases? I know, at the moment, this is very much a global pandemic—everybody is throwing their weight and shoulder to the wheel—but what are we doing to ensure that in the longer term taxpayers' money will be protected if we do end up down that route? Have we had those conversations with some of these companies already?

Sarah Munby: Ultimately, we would expect that our negotiating position will improve over time, because more vaccines are coming on stream. More vaccines are being approved; there is more supply. So it is not a

matter of locking ourselves in at the current price. It is actually taking the opportunity to renegotiate at the time at which annual vaccination becomes a certainty.

Q35 **Mr Holden:** That is a really good point, there—timing. What is the timing if we do need to look forward to annual vaccinations for next year? What are we going to be looking at, and when do those decisions actually need to be made, in terms of, first, I suppose, from yourselves, at BEIS, and from a taxpayer and production level?

Sarah Munby: Not for a while, simply because we have got enough for the whole of this year.

Q36 **Mr Holden:** "A while" is quite general.

Sarah Munby: Indeed, but let me go on. We have got enough for this year. If you also come back to that 367 million doses, let's assume all of those reached approval. We would have more than enough to revaccinate everybody next year if we wanted to. So we have got time in hand, here. So we are not making an annual vaccination plan now, because we don't know that it is necessary and we don't need to yet. But I can see Chris Wormald has got his hand up to come in.

Q37 **Mr Holden:** Yes, I just wanted to dive over to the permanent secretary at the Department of Health. Sir Chris, do you want to add something to that?

Sir Chris Wormald: Yes. It goes back to some of the unknowns I was describing earlier, as well. What the future vaccination scheme will be, beyond the first round, depends on those things, and also how the virus develops, because as you know, we already have some variants. So while

we will be wanting to plan for the future, we will want to do so when the right information is available on all those issues.

Q38 **Mr Holden:** Indeed. Sir Chris, on the right information, part of the problem with this is that we have already seen several quite significant mutations: the South African variant; obviously the one which was identified in the UK. As Ms Bingham mentioned, looking at this wider element of the vaccine, this one we are looking at that is being produced potentially in Scotland, we could be looking at having to do a vaccination programme for next year with an updated virus, as we do with the annual flu jabs, in a matter of months. Is this something which is under active planning at the moment?

Sir Chris Wormald: Well, I'll say various things about that, and then Kate will come in. I was about to say that Kate will be in a better position to answer some of those things. A couple of things I will say: viruses mutate. All viruses mutate. We see this with flu every year. Once you have got a base vaccine, creating alternative versions of that vaccine for new variants is considerably easier, as we do every year with flu—once you have got a vaccine that you can adapt. Some of the technological advances, and speed advances, that have been made over covid, compared to how vaccines are normally developed, which takes maybe five, sometimes ten, times longer than has been managed this time, ought to mean that we can also create vaccines for new variants, if those are necessary, at greater speed, but there is still a lag.

Now, I suspect that where we will need to get to is the same kind of global surveillance that is done on flu, where, as you know, people identify flu strains in advance and, on a world basis, change production, if that is the way this virus goes, too. I am stressing here the unknowns in this, because obviously it still remains a very new virus that we have a lot to learn about.

Kate Bingham: I think what you have described as "We need to make this as simple as an annual flu jab" is exactly the strategy that we have taken on at the VTF. I have written about it in *Nature*, actually, because there are clearly things that we can do to act more quickly next time and make this just much more routine, as part of both surveillance and then production of vaccines. Some of the things that we have put in place, from the Vaccine Taskforce, are to think about how we can improve the manufacturing, the scale-up and, fundamentally, the actual vaccine formats. At the moment, they require needles. We have two doses. They require cold chains. They require healthcare professionals to administer. None of those are ideal for vaccines if they need to be given repeatedly, so we need to be developing vaccine formats that are ideally oral, buccal or intranasal, or even a patch that you can just get sent in the post, and that will basically then protect you for whatever period it may be.

Q39 **Mr Holden:** Ms Bingham, again you pre-empt my next question and lead me neatly on to Ms Munby and Mr Elliott. Ms Munby, obviously some of the payments that we made in advance to these firms were to help to start the

manufacturing process and to support clinical trials. Given the early investment in some of these from the Government, why was it not possible to pursue perhaps more on the intellectual property rights, as part of the negotiations?

Sarah Munby: I will let Nick add to this, because I am sure that he will want to talk about it, but it is fair to say that all of these vaccines have been developed for global use. Vaccine manufacturers have been talking to people across the world. The idea that we could have realistically acquired intellectual property rights over the vaccines was not seriously on the table. Of course, if it had been, we would have been open to having that discussion, but ultimately the intellectual property here is probably owned in the right place, which is by the people who are designing and making the vaccines, and we need to be an outstanding buyer of those vaccines, both now and in the future.

Q40 **Mr Holden:** I understand. Mr Elliott, do you want to add something on this point?

Nick Elliott: Not really. I think that Ms Munby covered it adequately. The only thing I would say is that it is only where clinical development has been funded that you would have that option anyway, because the investment in manufacturing has been on the basis that it has been an upfront payment, to be recovered through the cost of the vaccine that is coming later. It is not something that you have given to those companies to keep; it is something that has been recovered through the cost of the vaccine.

Q41 **Mr Holden:** We have been putting some of this cash into supporting the clinical development of the vaccine programme, though, haven't we?

Nick Elliott: Yes, but that cost again is being recovered through the cost of the vaccine, and that is only where we have been conducting trials in the UK, and it has therefore given us the ability to gain access to those vaccines. We have commercial arrangements in place for pretty much everything that gives us those costs back.

Mr Holden: I am going to hand over to Mr Bailey now, who is going to develop this theme a little more.

Q42 **Shaun Bailey:** I just want to take a step back in terms of what Mr Holden talked about on upfront payments. We heard from the National Audit Office that £914 million of upfront payments were made for some of these vaccines. To develop slightly a side theme, how did we model the risk on these payments? Maybe this is one for Ms Bingham. I am conscious that, when we made these payments, one would give us a full refund in the event that we achieved regulatory approval, two required a partial refund in the event of non-regulatory approval of the vaccines, and two are non-refundable. What is the risk to the taxpayer there?

Kate Bingham: The risk was substantial for the upfront payments. In my appointment letter it was quite clear that the focus was to secure vaccines for the UK as soon as possible, and that would mean taking on costs for

manufacturing at risk before we knew whether or not those vaccines were safe and effective and approved by the regulators, so that if they were approved, we would then have manufacturing processes and vaccines ready to start deployment quickly.

When I was on the vaccine expert advisory group, which predated the VTF, that was a question that I asked the vaccine experts: what is the likelihood of success for these vaccine candidates? Across the board, the feedback was that vaccines that were already in the clinic probably had a 15% chance of success—maybe 20%—and vaccines that were yet to go into the clinic we should assume had a less than 10% chance of success.

There is no doubt that we took on risk to do the manufacturing scale-up for a range of different vaccines, and that is basically what the upfront costs were for: to allow those companies to invest in the manufacturing so that they would have doses available should they be successful. That was an explicit strategy set out by the PM, so that we could be quick to start deploying if any of the vaccines proved to be safe and effective.

Q43 **Shaun Bailey:** Thanks, Ms Bingham. The one thing I would say is that obviously 20% and 10% are quite significant; there is quite a high degree of risk in the figures that you have just quoted. In terms of the existing risk, which is still there, because not all the vaccines have been approved yet, what is the outstanding risk currently to the UK taxpayer?

Kate Bingham: Nick, do you want to answer that?

Nick Elliott: Mr Bailey, when you look at the portfolio, if we had not made that investment, you would not have had vaccines available at the point of regulatory approval. Looking at the overall value-for-money business case of vaccines, weighed against the cost of the pandemic, it takes only one of those vaccines to be successful to vastly recover, for the taxpayer, the investment that has been made at risk. Actually, we are in the fortunate position now of having three vaccines in that portfolio approved for use, and hopefully we will see some more as well. So it is almost the wrong question. The question has to be, "What is the success of the portfolio as a whole?" because that is the value-for-money criterion that was taken forward in funding the programme.

Kate Bingham: I might add that of the seven vaccines we have, three are approved and a further two, Janssen and Novavax, are in their final pivotal phase 3 trials—I hope that they will be releasing their phase 3 initial interim efficacy data this quarter—and the latter two, which are Valneva and GSK-Sanofi, will be the second half of the year. I think the portfolio has developed absolutely as well as we could have hoped. The fact that we have had to pay up front, or at least a portion up front, is so that we can start deploying quickly.

Q44 **Shaun Bailey:** Obviously, I completely appreciate and agree with the sentiment that the availability of a vaccine is vital, and that there is a benefit in taking the risk. My question was more about, in terms of raw

figures, what the taxpayer is putting out. The purpose of our Committee is to look at value for money for the taxpayer. Notwithstanding that there is value for money in the vaccines, I am curious to know, as of right now on the books for that portfolio, what are we still risking? I do not disagree at all with the sentiment that the outcome of having those vaccines is a

risk worth taking, but I am curious to understand what that risk is.

Kate Bingham: There will always be risk in biological manufacturing, because we are growing living mammalian cells, which is non-predictable. It is not like stamping out PPE equipment. It is a highly complex, nonlinear scale-up that is non-predictable precisely because of the nature of those processes. We have a phenomenal group of people working on it, and I think that is all generally working pretty well.

To nail your point about value for money, if we wanted the cheapest vaccines, we would have said that we would be happy to receive them in 2022. I have no idea how much cheaper they would be, but they would be cheaper, because what we wanted was the most scarce resource, which is the vaccines that were available as soon as they came off the production line in those early days. It is a trade-off to say, "What are the costs we're paying?", which are about £10 a dose. Again, I do not think that is excessive and it is in line with what we pay for flu. If we wanted to focus purely on price, however, which we did not, that would have been at the cost of the delivery date.

Q45 **Shaun Bailey:** I also want to look briefly at priority access, which may be one for Ms Munby. Obviously, we know that the Department for Business, Energy and Industrial Strategy has invested about £519 million in manufacturing capability. Do you think that investment is enough to ensure that the risks that we have in some of our priority access arrangements—for example, if the UK supply chain fails or if we cannot meet the capacity and we cannot access those vaccines—are balanced?

Sarah Munby: Yes. I have a couple of comments on manufacturing. First, it is important to say that, in the main, manufacturing is the responsibility of the people who are supplying us with the vaccines. In most cases, they are large companies with pre-existing supply chains. They are manufacturing; they give to us.

Each of the investments that we have made, particularly in VMIC and CGMIC, has significant capacity. You will see it described in the Vaccine Taskforce report at the end of last year as up to 70 million doses in the first six months of operation for each of those facilities. Those come on stream in the second half of this year and at the end of this year. That is sufficient manufacturing capacity to manufacture all the vaccines we might need in a year, if we had to do that, so we have full contingency manufacturing capacity within UK HMG-owned facilities.

As it happens, we are not currently using that capacity; it is not on stream yet. Most of the manufacturing is being done entirely through the auspices

of the people who we have contracted with, and that is fine, too. But as we look ahead to those uncertainties about mutation, annual vaccination and so on, having built up that capability—for the UK to be confident that we can do our own manufacturing if we need to—is a really important legacy of this work.

Q46 **Shaun Bailey:** Just so that I am clear on what you are saying, you are confident that the UK has enough of a supply chain, partly through the investment that your Department has put in, to ensure that we can manufacture these vaccines going forward. In the event of an annual vaccination drive being needed, we would be able to meet the demand through the UK supply chain.

Sarah Munby: If we wanted to manufacture it in our own facilities, which we might or might not. Depending on who we were buying it from, we could.

Kate Bingham: It is probably worth noting that what we have done in VMIC and CGMIC is to put in state-of-the-art bio-processing equipment. These are not thick steel drums; these are flexible, bio-processing capabilities that allow us to manufacture different kinds of formats. We can manufacture viral-based vectors, mRNA vaccines and protein adjuvant vaccines, as well as antibodies. The things we cannot manufacture are the whole inactivated viruses, because that requires very specific containment facilities—that is what we do with Valneva in Scotland. But the other formats—at least the formats that are currently active in the vaccine space—are all ones that we can manufacture. Will they need to be updated in due course, as formats develop? Of course. But we will have state-ofthe-art manufacturing once CGMIC and VMIC are up and running, including things like CPI up in Darlington, which provides very valuable liquid nanoparticle capability. That will actually provide the capability that we need to manufacture vaccines in the UK.

Q47 **Shaun Bailey:** I want to move on, if I may, to the indemnities that have been taken out in respect of the vaccines. This is a two-part question, probably for Ms Bingham. I also want to talk about some of the indemnity support that has had to be offered for community pharmacies. For these vaccines, indemnities have had to be entered in as part of the contractual process. Can you just talk me through some of the risk modelling that was done around that and how that operated? In a worst-case scenario, what would be the impact on the taxpayer?

Kate Bingham: I am going to hand that over to Nick, if that is okay.

Nick Elliott: You have to start off from what the position of each of the suppliers was, in that they were all seeking statutory protection of some form, just as has been given in the US with the PREP Act. We took advice from Ministers and all the different Departments, including Health, as to what line we should take, and it was agreed that we should negotiate independently with each of those suppliers. But it was absolutely a red line for every manufacturer that they wanted some form of statutory protection

or, if not, some form of liability cover to provide them with confidence that they could produce these new vaccines.

With regards to indemnities, we have slightly different agreements and arrangements in place with each of the manufacturers, but on the whole, they are provided with fairly broad indemnities. We have written to the Chair of the Committee with an outline of what those are. Those indemnities come into existence at the point at which the vaccines are given. Every time we start a vaccine programme with one of those vaccines, we will lay before Parliament, through the Chair, what the indemnity is. We have not been specific about that, for a whole variety of reasons. I am not sure that, in this particular forum, I would want to go into the specific details of those, but they have been made available to the Committee.

Q48 **Shaun Bailey:** We are grateful for that. The point that I suppose I am trying to get at is this: in the throes of the negotiation around these indemnities, was any form of modelling done on what may happen as you were taking that risk decision—ultimately, it will be a risk-based decision to enter into these indemnities—and on what the worst-case scenario could be, in terms of what would happen if it all went wrong? How was that done? I just want to understand a bit more about the process that was followed as you were negotiating these indemnities. I appreciate the explanation, and that is understood, but I am just wondering how the risk modelling was done.

Nick Elliott: Everything was modelled. The numbers that you will see in the information that has been made available to the Committee includes the worst-case modelling that has been done. What you have been provided with is the worst-case position for each of those vaccines.

Shaun Bailey: That is great. Thank you, Chair.

Kate Bingham: It is probably worth pointing out, however, that if we had not offered indemnities, we would not be securing vaccines. That was not a choice: either we agreed some level of indemnity with the different vaccine suppliers, or we would not secure that vaccine at all.

Q49 **Chair:** Are you saying that, Ms Bingham, because the indemnity cost would be so high that the companies would ordinarily have wanted to go through more rigorous testing before putting the vaccines on the market?

Kate Bingham: There is such enormous demand for the early vaccines that all the different vaccine companies had countries queuing up to do bilateral deals. If we had said that we were not prepared to offer a level of indemnity, they would have just gone to the next country on the list, and as we were mostly first, they had a lot of other places to go to after us.

Sir Chris Wormald: May I just add something? As you may remember, Chair, this is not an unusual thing for Governments to do; we did it during the swine flu epidemic, and we understand that a lot of countries around the world are doing the same for this. It is exceptional in that we do it only during emergencies, but during emergencies it is something for which there is precedent.

Q50 **Chair:** We could certainly get into a squirrel-hole debate on this, because sometimes it can also reduce the cost of something relative to the risk of indemnity, although that is perhaps slightly different in this situation. Do those indemnities apply to all the purchased vaccines, wherever they are deployed, whether by the Crown dependencies or by the devolved Administrations?

Nick Elliott: Yes.

Q51 **Olivia Blake:** I have a lot of ground to cover so I will ask some quite sharp questions and would appreciate sharp answers. Sir Chris, can you outline why the 12-week wait decision was made?

Sir Chris Wormald: The delay that we introduced to the second dose?

Olivia Blake: Yes.

Sir Chris Wormald: The very short answer is that we followed the advice of JCVI and the chief medical officers, which was that the best public value in public health terms was to get a first dose to the maximum number of vulnerable people as quickly as possible, as opposed to the alternative strategy of giving second doses to the same people. It is worth emphasising that the second dose is still very important, but the way Professor Whitty describes this is that the first dose gives you protection and the second dose gives you durability. The basic reason that we did it was for the public health reasons set out by JCVI and the CMOs.

Q52 **Olivia Blake:** The decision was clearly taken before the full lockdown. Do you think that the decision could have been different, and will it be reviewed at different stages throughout different lockdowns?

Sir Chris Wormald: It was not explicitly linked to the lockdown, but obviously the faster the disease is spreading, the more important it is to maximise the number of vulnerable people who have had the first dose. We keep all those things under constant review as the evidence base develops, but the basic maths shows that it is better to have a larger number of people with first-dose protection than a much smaller number of people with double-dose protection. We think that is a very strong argument.

Q53 **Olivia Blake:** In the light of that, do you think that the delay will automatically be considered for all the vaccines on your list, and will you be asking the producers to provide you with sufficient evidence for that?

Sir Chris Wormald: It is directly driven by the evidence. I only know the details for the vaccines that we are using. It would depend upon the data about individual vaccines, and then the advice of the JCVI and the CMOs about what the best public health value is. I don't think we can generalise about vaccines on this point; it has to be a data-driven public health vision.

Kate Bingham: Can I just add one point to that? If you remember, the Oxford trial was a single-dose protocol originally, and then when they looked at their phase 2, one of the arms had two doses, and it was clear that the two doses did better. Then the people who had been vaccinated in the phase

3 trial were asked to come back for their second dose. That is why—we have not seen it yet, but the MHRC have the data—they have a spectrum of data showing what the immunogenicity looks like from four weeks through to 12 weeks.

When that data is published, there will be strong experimental data supporting that. We may not get that in other vaccine trials, because most have a very fixed duration between doses. It is well understood that spending longer between doses improves immunogenicity, so I think it is of course the right thing to do from a public health perspective. I don't think you are going to get the same granular data with other vaccines that we have seen with Oxford.

Q54 **Olivia Blake:** Thank you, Ms Bingham. You have undercut one of my questions. My next question is: what support will you give to make sure we are following up on this and making sure the body of evidence is there for all the vaccines on the list? Do you feel that we should invest in that?

Kate Bingham: One thing we have invested in is the human challenge model. Up until now, the trials have been run in very traditional, large, placebo-controlled studies, where you are basically comparing people who have been vaccinated against people who have not to show that the vaccination actually provides the protection. It is obviously very difficult to do that in countries where vaccines are being rolled out, because precisely the people you want to protect are being vaccinated.

The human challenge model is one where you take young, fit volunteers and deliberately infect them to start looking at the next-generation vaccines in highly controlled conditions so that you can start teasing out the mechanism of how the different vaccines work. You can start pulling out, for example, immune correlates of protection because you can test the nasal epithelial and immune cells before infection, as well as after infection, in a controlled way. You simply cannot do that in the large trials.

With the Department of Health and Social Care—this has worked really well—we have been doing some of these first-ever initiatives so that we will be in an incredibly strong position to support the development of nextgen vaccines and optimise the dosing protocols, precisely to generate the data that you have suggested.

Sir Chris Wormald: We also have the data from the surveillance programmes that we are running on the vaccine roll-outs overseen by PHE and MHRA.

Q55 **Olivia Blake:** Do you know the date when that data will be in the public domain? I am going to come on to confidence in a second, but how confident are you, given that, as I fully accept, the approach is to get as much out the door as possible, that you are going to have enough supplies for the second doses of each of the vaccines?

Sir Chris Wormald: We have covered the supply position in detail already. As Sir Simon has already set out, our delivery models are based on the

availability of supply, covering both the first dose and the delayed second dose. Those are all built into the models.

Q56 **Olivia Blake:** And the data?

Sir Chris Wormald: I can't give you an exact date by which particular bits of data will be available, because a lot of this is research data, as Kate just described. Basically, our data will get better all the time.

Q57 **Chair:** But, Sir Chris, you are quoting data at us and we have not seen it. When will that be available to the public in any form—whether the whole dataset or a summary of it? You have given us some information today, but when are we going to see more detail?

Sir Chris Wormald: The data we publish about the vaccine programme should get more granular over time. As Simon described earlier, we are going to daily publication today, and then as I say it will become more granular over time. Then there will be—

Q58 **Olivia Blake:** Sorry to interrupt. Do you think that it would be of international imperative and use to try to speed up that data publishing, for the reason that the UK is doing things differently?

Sir Chris Wormald: We are hitting a balance here. Obviously, we want to make as much data as possible as transparent as possible, but it has to be robust. We have seen in other instances in the pandemic that we have been strongly criticised for data publications that did not meet some people's statistical standards, so in this case we are very, very keen to hit the right balance of—of course—getting as much out as possible as quickly as possible, but making sure that it meets the statistical standards that people also want to see. So it will be an evolving picture: there will be more and more granular data on the actual roll-out, as Simon has described, and more and more of the research data that Kate has been pointing towards, over time. I can go away and look at whether we can say anything about the timing of that; I don't have dates for you at the moment.

Olivia Blake: That would be useful.

Sir Chris Wormald: I will come back to the Committee if there is something more specific I can say on the research data side.

Kate Bingham: Can I add this on supply? If you just take the three vaccines that have all been conditionally approved, that vaccinates the entire UK adult population, without any of the additional vaccines getting approved.

Q59 **Olivia Blake:** I appreciate that. I want to ask Dr Lawson, if that is okay, about the likelihood of people not turning up three months later and how you can counter in your communications—I think Sir Chris hinted at this—patients now thinking that one dose is sufficient and enough.

Dr Lawson: Thank you for the question. We are using a number of interventions to try to make sure people do return for their second dose. For example, when we asked GPs and the primary care networks to switch

from two doses to a single dose, we asked them to rebook the appointment, not just cancel it. At the moment, that's a mixture. We need to support the PCNs in making sure that second appointment is booked in, and we indeed had a conversation with the CCGs last night about that to make sure that is in place. When you book an appointment at a vaccination centre, you book two appointments at the same time, so you book both your first dose and the second dose, and that appointment will be in there for you. When we set people up at hospital hubs, we ask them to do the same thing. Of course, the vaccination event is recorded in your GP record, so we can use the ability to interrogate the GP record to look at whether you have returned in time for your second dose and to follow up accordingly. So we are both trying to pre-empt it by making sure the vaccination is in there and then making sure we have got the surveillance to follow up where that doesn't happen.

Q60 **Olivia Blake:** I have another one for you, Dr Lawson. In relation to the absolute last resort guidance—I am using that phrase—for mixing and matching, what tests have there been on the efficacy of mixing two different vaccines, and would it be advisable to offer a third jab in these circumstances? Finally on that point, would indemnity cover such a clinical choice?

Dr Lawson: I think you are referring to the paragraph in the Green Book that talks about the situation if somebody shows up and you cannot track what their first vaccine was. I'm thinking that Mr Brodie may want to come in on that, from the Public Health England perspective, his team having written the guidance. We don't expect this to happen; the only situation in which it would happen is if somebody didn't have their first dose in the UK at the moment, because we do have this ability to look back in the GP record to see which vaccine you received, which would not only tell you what vaccine it was but also which batch number, etc. So it's an extremely unlikely occurrence.

My understanding is that a clinical trial is being set up to look at whether that would indeed be efficacious, but that is clinical data that needs to be examined and prepared. We don't have a programme set up for that now, because that isn't how the programme is set up; the programme is set up to give you the same vaccine at 12 weeks that you had in the first week.

Q61 **Chair:** Can we be clear, Dr Lawson, because there has been some talk—perhaps loose talk—about mixing vaccines and the danger of that? Can you be absolutely categorical? From what you have said, there is no plan to mix vaccines; there may just be an occasional patient who has received a vaccine outside the NHS and who then needs a second vaccination—

Sir Chris Wormald: I can answer this. To be clear, that is not the policy of the Government. As Emily has made clear, there is no data to support that approach. As Emily has said, there are some very, very exceptional circumstances in which we might have no choice. As I say, there is no data to support that approach.

Q62 **Chair:** To be clear, there is no plan to mix vaccines on a routine basis. We have to get that public health message out there, because there has been some confusion in the media. Dr Lawson is nodding as well.

Michael Brodie: That is absolutely the Public Health England position as well.

Q63 **Olivia Blake:** Sir Simon Stevens and Michael Brodie, what are the main risks of deploying each of the five different vaccines that have been purchased so far?

Michael Brodie: I am happy to go first on this. The biggest challenge is with the Pfizer vaccine because of, as you are aware, the cold chain storage—it has to be kept at minus 70°. We have other low-temperature freezers[1] in our storage, in our warehouse, and we have isothermal boxes packed with dry ice, which we use while transporting. Clearly, warehouse operatives are picking from those freezers. We have to do that in a structured way, which is why we have put in place the robust ordering process, which was reported on last week. It has a specific cut-off time, which gives us the certainty and the consistency to allow us then, through our supply chain partners, to pick the right number of batches in a safe and controlled way. With Pfizer, the big issue is around securing the cold

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chain throughout. With Oxford, it is stored at 2° to minus 8°^. The product is much easier and much more like other vaccines. Bear in mind that we have a track record of dealing with 17 different vaccination programmes—in a normal year, we do 300,000 deliveries—so this is the kind of expertise that we already had. In all humility, and not taking anything for granted, the risks with the Oxford vaccine are much less.

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Q64 **Olivia Blake:** What about the other three? That is key. Will we see any more difficulties from the other three, or are you confident that the Pfizer one is the most tricky?

Michael Brodie: Pfizer is the most tricky, but I will defer to the Vaccine Taskforce on the specific characteristics of the other vaccines.

Kate Bingham: The Janssen vaccine is likely to be very similar to the AZ one, because it is also another adeno-based vaccine. Basically, that will be

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[1] The Department has written to the Committee to note that the other low temperature freezers referred to are ultra-low temperature freezers

traditional vaccine cold chain, and should be manageable. The Novavax vaccine, which is an adjuvanted protein-based vaccine, is again in a wellunderstood vaccine format, which will be the same as Oxford, so it will be a standard supply chain or cold chain, and I think will be manageable. So the tricky ones have been the mRNAs, because these are very, very unstable bits of genetic material. Valneva, too, will be standard supply chain or cold chain. We started with the most tricky, and it is getting easier, in terms of the characteristics of the vaccines.

Q65 **Chair:** Ms Bingham, when you were looking at the vaccines, did you consider these issues when working out which ones to buy? Obviously, speed was a high priority.

Kate Bingham: We did consider them, but the question was whether a vaccine was deployable. If we had felt that it was completely not deployable, we would not have progressed. The challenges were the short stability. Of course, as the vaccines are developed, the stability increases; it is just that you are limited in terms of knowing how long the shelf life is going to be, because you are measuring it as you are developing the vaccines.

Yes, we did consider that. When we realised that it was a matter of highly organised and complex planning, as well as having the right minus-70° fridges, then we felt that Emily Lawson and the team could do it. We did not turn off anything because of the difficulty of deployment, but we did flag that that vaccine would be more expensive and difficult to deploy than a more standard one.

Sir Chris Wormald: I should add, Chair, that although we had run this programme in two chunks, with two accounting officers, Kate and the Vaccine Taskforce have involved the delivery chain at all points in their systems. Likewise, on our side of the house, we have involved the Vaccine Taskforce in what we do. So each strategy is informed by the other; they have not been done as two separate things, with a throw over the wall in the middle.

Q66 **Chair:** Okay. We will come on to who is responsible properly later.

Sarah Munby: I might come in here, if I may, just to point out that it is always worth remembering that at the beginning of this programme we had very high levels of uncertainty. When we started, we did not know whether any vaccine would work, and it was entirely possible that the only vaccines that might have worked would be the ones that required a very complex supply chain. So we gave DHSC a really tough ask, because we said, "You need to be prepared for the most difficult, as fast as possible," because that might have been the only route we had.

Q67 **Olivia Blake:** Obviously, you want the same vaccines going to the same place so that the second delivery can be of the same thing. There have been some teething problems, reported anecdotally, of double the vaccines appearing at GP practices, and people expecting one type of vaccine and eventually getting the other. What would you say about that? How are you

tracking and making sure that you are going to get the right vaccine to the right place, and what level of wastage have you had so far of the vaccine that is harder to keep, if any? That is to Dr Lawson.

Dr Lawson: Any arrival that has not exactly hit the mark is obviously a mistake that we then look into and figure out how we operationally improve. I think it is worth bearing in mind that 97.3% of the vaccine deliveries have been on time and in full—98.15% of all of the deliveries, because, of course, we have delivered over 100 million individual items as part of the vaccine deployment over the last six weeks. However, the 2.7% is still very troubling for the people who are on the receiving end and it obviously affects recipients. So every time something goes wrong, we obviously investigate what exactly happened and how we make sure that it does not happen again.

One of the challenges we discovered last week was that with the communications that were sent to each site—each PCN site; there were 1,380 deliveries last week of vaccine—those letters were sent out at the end of the previous week, but some of them had not arrived before the vaccine, because they had been held up in a communications chain. So we have now changed the communications chain so that it is not a chain; it is just a direct communication to the site so that we know, when we press "send", that it is being received on the same day. That is just one example. It is part of our ongoing operational improvement process to take that feedback and then figure out how we do better the next day, or the next week.

The other thing we have done, which I think came up right at the beginning of the conversation, is that we have now sent out supply information to PCNs, not just for this week but for next week, as of the end of the day today, so that they can plan ahead. Now, what that also means is that we will call some individual PCNs if additional supply becomes available and say, "Look, can you take some extra, because actually we have got more next week than we thought we had?" So it is a mixture of getting at least a base level of stability in there so that people can plan ahead, but also respecting the fact that we want to get vaccines into arms as quickly as possible. A bit of agility is definitely a good thing.

Q68 **Olivia Blake:** Going back to the regionality of this, what oversight is there currently of local decision making around this programme? Do you feel confident that, for example, those aged 80 or over are being done first, or is it being done differently in different localities? How quickly are they moving through those lists, because obviously the populations are very different in different parts of the country?

Dr Lawson: We are absolutely tracking that, and age is a relatively straightforward thing to track, because obviously it is associated with your GP record. While there are always individual data quality issues as we evolve the programme, certainly indicatively we know how many over-80s are being vaccinated.

The way that the supply is allocated to the PCNs—primary care networks—and we are adjusting that as we go along as well, is that we looked at those with the largest number of over-80s to start off with, and they were part of the first tranche. Also, with the ones we called last week, for example, where we had additional supply due to the relaxation of the twodose time, we also asked them to take additional supply last week. What we are doing, not so much for this week but for the end of the month, is to then make sure that there is additional supply going to further PCNs that are very big—not just in cohorts 1 and 2 but also cohorts 3 and 4—as we move through the programme, because it is not evenly split across PCNs, as you say. So we are looking at basically their registered patient database and making sure that they get sufficient supply to register the cohorts in roughly the right order, while also not holding up the overall deployment, because, equally, we want to get the doses out every week.

What is worth bearing in mind, of course, is the care home relationships as well. Every PCN is linked to a number of care homes, and that needs a particular kind of deployment activity, so we are making sure that the AstraZeneca vaccine, for example, which makes that easier, went to every active PCN last week. They all got one box at the end of last week, and then they will be sending more to make sure they have covered all of their care homes, because that is not evenly split across the country either.

Q69 **Olivia Blake:** Finally, the last question I have about regionality is how decisions are being taken to prioritise where the mass vaccination sites are. Is this driven by population, or by the number of cases? How are those decisions being made, and will those decisions be flexible? Will we see any more sites than those 11 come online?

Dr Lawson: There are seven sites starting today, as you know, and there will be 10 next Monday and then more before the end of the month. In the deployment strategy—which you have not had a chance to read yet—it says we will have 50 by the end of the month. Those sites are all identified and working their way towards being ready.

The way we selected all of the sites, not just the large-scale vaccination centres, was to make sure there was as even a spread of geography as we could possibly have. Starting with the first 50 hospital hubs that started on 8 December, looking at the first set of primary care network sites, we started from a local basis, making sure there was coverage—using the support of the military planners who we have, who can put things very precisely on the map—and looking at coverage of population. We looked at it against deprivation indexes as well, to make sure we did not inadvertently miss that particular angle, and basic geography: looking at travel times and making sure that each PCN would be stood up over time, or if not, that we had an alternative mode to deliver—for example, through community pharmacy, which we will also stand up over the next couple of weeks.

The intent from the beginning has been to get to all of the cohorts as quickly and safely as possible, recognising we could not do everything in one big

bang. Each tranche of sites has been spread across the country, recognising that when you only stand up a certain number of sites in a week, even spread across the country, that still means there are individual areas that need further attention. As we go through, we have explicitly tried to fill those gaps in.

Chair: Thank you, Ms Blake. I am now going to turn to Dame Cheryl Gillan MP. Dame Cheryl, over to you.

Q70 **Dame Cheryl Gillan:** Thank you, Chair. I just want to probe a bit more about the promises that are being made, because I have had the chance to skip-read the vaccines delivery plan, and I am still concerned about the logistics of whether we will be able to deliver on the promises that have been made. As the Government have been criticised for over-promising and under-delivering, I think these are really quite key.

As far as I am concerned, we know how much we have ordered of each vaccine, but there has not been a timetable for delivery of those vaccines at all. I wondered whether you are satisfied that the manufacturers can, in fact, deliver the vaccines at a speed and to the places that can meet the Government targets they have already announced.

Kate Bingham: The way we have worked with each of the companies, as part of diligence and part of contracting, is to set out timing of supply contracts and of deliveries. Of course, in each case, we are doing that without any of those vaccines being fully scaled to their commercial scale and amount, because we are right at the front and right at the beginning. What we do know is we are getting our share of the vaccines: we are absolutely getting the vaccines that are available which we have for the UK. We are receiving those, but the challenge is doing the scale-up.

Q71 **Dame Cheryl Gillan:** But, Ms Bingham, you and I come from a commercial background—or a semi-commercial background, in your case.

I would expect to see a timetable actually setting out the numbers.

Kate Bingham: Yes, we have a timetable, but the timetable is based on the most available data that we have, where we do not have these manufacturing facilities at full scale. The challenge is in the scale-up. Once you are at the scale, then it is cranking a handle, because then you have the procedures, the processes, the quality sign-offs and so on all in place. However, what is not there is what they are actually going to be able to deliver, versus what they are expected to be able to deliver. Nick, do you want to come in?

Nick Elliott: We have detailed supply schedules right up until the end of February, and we are getting increasingly confident about the schedules for March as well at the moment. These things crystallise and get more granular as we get closer to the delivery point, and we are working on a daily basis with each of the suppliers. We are absolutely confident that supply will not be a constraint in achieving the February target to vaccinate all priority 1 to

4 groups, and we are seeing confidence in supply thereafter as well to make sure that we can enhance and increase the deployment.

Q72 **Dame Cheryl Gillan:** Can I pick you up on that? You say "all priority 1 to 4 groups" but I believe that you are working on the assumption that only 75% of the cohorts will in fact take up the vaccine, or be vaccinated.

Nick Elliott: In terms of vaccine supply, we are looking at the total 100% amount. There will be enough vaccine supply to meet 100%. Whether or not that is then taken up is a different issue.

Q73 **Dame Cheryl Gillan:** That's right, but the statement that is being made is in absolute numbers and saying that it is the total of the cohorts. That is not in fact accurate because you are working on 75% of 100% of each cohort taking up that vaccine.

Kate Bingham: We have [1]147 million doses of approved vaccine. We have 100 million doses of Oxford, we have 40 million doses of BioNTech, and we have actually taken on another 10 million of Moderna, so we now have 17 million of Moderna.

Nick Elliott: We have, Kate, but it is when those vaccines arrive and when those doses arrive. From a supply perspective, we are looking at 100% of that clinical at need group. When it comes to deployment, how those vaccine doses are then deployed is a matter for Emily and the team to work out.

Q74 **Dame Cheryl Gillan:** That is my point, and therefore it means that you have to be very careful about the language that you use, and the accuracy with which you portray this, because if 25% of each cohort does not take it up, you are not going to fulfil the absolute numbers that politicians are putting out to the public as being the numbers of people who are going to receive the vaccine. This business of over-promising and under-delivering is really important, so I would like that to be taken away.

I was skip-reading the new report that just came out while we were on air. There is obviously the issue over fill and finish. I wonder whether somebody would like to comment on exactly where we are on the fill and finish capacity. I understand that you have entered into the arrangement with Wockhardt in north Wales, in Wrexham, but is that fill and finish capacity, which is a potential bottleneck, as is acknowledged in this report, functioning at full pace and is it no longer a bottleneck?

Nick Elliott: It is not a bottleneck and has never been a bottleneck. I am not sure what it says in the report because I have not read it, but that fill and finish capacity is operating as we have contracted it to.

Q75 **Dame Cheryl Gillan:** It says in the report: "Identifying limited global supply of Fill-Finish capacity as a potential bottleneck in the manufacturing

[1] 'CORRECTION: BEIS has since informed the Committee that the correct amount of doses of approved vaccine is 157 million. This includes 100 million doses of the Oxford vaccine, 40 million of BioNTech, and 17 million Moderna'.

process, the VTF entered into an agreement". As far as we are concerned, is there no issue and no problem with the fill and finish capacity in the UK?

Nick Elliott: The fill and finish capacity in the UK is just for the OxfordAstraZeneca vaccine. There is no issue with the Wockhardt fill and finish. We might also potentially use that for the Novavax vaccine, which comes later. We are looking at that as an option as well. Of course, fill and finish is globally constrained and for some of the other vaccines that are being produced and manufactured elsewhere they could be potential issues, but we are working with the suppliers on each of those.

Q76 **Dame Cheryl Gillan:** Okay, so we are not entirely out of the woods yet on fill and finish.

Nick Elliott: We are absolutely okay on fill and finish for the OxfordAstraZeneca vaccine. For the Pfizer vaccine, they have different issues in terms of their scale-up, of which fill and finish is not a particular constraint but there are other issues in terms of how they are manufacturing and getting to full scale. I think the issue is that with every single vaccine these are new products with new facilities, sometimes new supply chains, and there are just scale-up issues that you are getting full visibility of. Normally these would not be shown because you would not be getting the vaccines as quickly and as early as this.

Q77 **Dame Cheryl Gillan:** On this particular place and people, I read in the report that you have 80,000 people who have volunteered on the vaccination programme to date. Are you sufficiently satisfied now that you can continue to identify and recruit staff as the requirements continue to change? Is there any update on your future recruitment to this programme?

Dr Lawson: Shall I take that one, Chair?

Dame Cheryl Gillan: Sorry, Dr Emily; I wasn't quite sure who to address it to.

Dr Lawson: Let me start, anyway. So, yes, the response to the three national routes which are being used for volunteers and clinical staff to offer their support has been incredibly successful—much more so than we could ever have imagined. We are now seeing the throughput through those pipelines, through NHS Professionals, through the Royal Voluntary Service, and through the St John Ambulance. I think people may have noted St John Ambulance staff being deployed for example today in the vaccination centres. There has also been very successful local recruitment, which you don't see so much about; but each system started recruiting back in November, or even October, to make sure that they could meet at least initial workforce levels themselves. So a mix of those locally recruited staff who are based locally is now being supplemented with that national level and we can see a way through into this scaled-up capacity, which, obviously, we are bringing online, in line with the supply that Mr Elliott has just outlined. So workforce having been of real concern—identified in the Report—thanks to all the efforts that have taken place both locally and

nationally, it is now really proceeding at pace and will be there for the scale-up if it continues as we plan.

Q78 **Dame Cheryl Gillan:** Can I finish my section, because much of it was covered before, by saying that this is a fantastic programme? There is no doubt about it and I am second to none in my admiration for the people who are working on this, and what they are doing, but there has been some bad publicity attached to it—not least people saying that they have expressed an interest in playing their part, and they have had the bureaucracy that they have had to face, or they have just been ignored. Can we make it very clear that everybody who has come forward to volunteer is not only appreciated but that we have so many volunteers that we are overcome with the generosity of people wanting to participate? I think this is really important, because we are damaging what is actually one of the most phenomenal exercises that this country and the national health service has ever put in place, and I would be very happy to hear a very solid statement like that, perhaps from Sir Simon.

Sir Simon Stevens: I agree with you completely, Dame Cheryl. I think it has been a fabulous response. As Emily and the Report point out there are over 80,000 people now who are trained and ready to administer vaccines. We have got St John's Ambulance, the Royal Voluntary Service and many others. As you also rightly say, that wonderful level of support—we will want to be able to respond and help people help us as the year proceeds; but not all those people are needed today or this week, so finding the right way of saying that, as you so articulately put it, is crucial.

Q79 **Dame Cheryl Gillan:** Do you have a rebuttal unit in the NHS? How rapid is that rebuttal unit, and don't you think it would be a good idea to put better identified FAQs on the NHS website so that we can point people towards those FAQs—for example, "I volunteered and I appear to have been ignored"? I think that the communications part of this is also part of what is letting us down. Do you agree with that, and could you look into that as a potential answer to some of the issues?

Sir Simon Stevens: I certainly agree that frequently asked questions on the website would make sense and, yes, I am sure we can do that very quickly.

Q80 **Dame Cheryl Gillan:** I look forward to seeing that. Perhaps you will send me the link.

Sir Simon Stevens: By the end of today.

Chair: We would rather they were accurate than rushed, I think.

Dame Cheryl Gillan: I agree.

Sir Simon Stevens: We just have to take dictation from Dame Cheryl, and that is the text we are using, essentially.

Dame Cheryl Gillan: Flattery will get you nowhere.

Q81 **Chair:** If you think you can change the recommendations in the Report by that, you don't know Dame Cheryl well enough. Can I just say, to Sir Simon and Dr Lawson—a number of you will have an interest in this—we are getting in evidence today and in conversations we have had locally and with colleagues around the house, confusion by GPs and others on the ground as well; so communication isn't just to the public. It is vital that people know exactly what they should be expecting and when, because it is those frontline health workers who will get the questions— and if they can't answer them. That brings me to a question that I have been asked: are we doing all the over-80s first and pausing in areas such as east London, which are young, and then waiting until we get to the 79-year-olds and the over-70s generally, or will it be rolled out more smoothly across the country? Dr Lawson, can you help with that?

Dr Lawson: It is not an either/or question, but an "and" question. I think I mentioned earlier, in answer to Olivia Blake's questions, that we need to ensure that every PCN has had the chance to vaccinate particularly the over-80s and their care home residents. So where there are PCNs that have managed to successfully vaccinate all their over-80s and we have not enough to supply absolutely everybody with what they would like to do this week, then we have said no, it needs to go to the PCNs who have a much bigger group of over-80s to get through. However, as soon as we are at reasonable coverage, I would expect to be able to have a conversation with the CMOs to say that we need to push as much vaccine out as we can. Obviously there is a trade-off between ensuring complete equity and the speed of overall deployment and making sure we get vaccines in arms, but what we cannot do is have one part of the country running so far ahead of another that there is real inequity there.

So it is really a "both/and" conversation rather than an either/or. For the PCNs that have covered all their over-80s, I would argue that they should be making sure that they cover the care homes at the moment with the additional AstraZeneca vaccine that came in at the end of last week, and possibly extend beyond their PCN. That will be in a communication about care home coverage that we will send out this week.

Q82 **Chair:** I have been doing some number crunching. If you compare, say, Sir Geoffrey's constituency with my own, we can compare notes on age profile, which is massively different. I have a large cohort of 30 to 35year-olds and relatively few—between 5,000 and 6,000—over 80s. It is a similar number for between 70 and 74, for example. The danger is whether that will set up a system where we get all the logistics in place, have all the volunteers helping, and then it stops for a bit and it is very hard to get it up and running again. Are you bearing in mind the smooth curve of distribution as well as the obviously vital issue of making sure people in care homes and others get it quickly?

Dr Lawson: We are absolutely bearing it in mind. We also have to act in concert with the JCVI guidance and make sure that those priority cohorts are vaccinated as soon as possible across the country, particularly given the

data that you will have seen on the deaths that can be prevented. For 20 vaccinations in a care home, that is one death prevented, for example. It is as much as possible trying to make it as easy as possible for people to do the right thing and get to those critical cohorts as quickly as possible. That is where places such as the large vaccination centres and also community pharmacy can help smooth the distribution within any particular locality. So it is looking across the whole health system to make sure we use the right mix of delivery models for that particular population and all the different communities that they represent.

Chair: Thank you. Dame Cheryl wants to come back.

Q83 **Dame Cheryl Gillan:** I wanted to ask Sir Simon about the co-ordination and communication with the CCGs particularly. I heard some anecdotal evidence that the CCGs were being asked not to give out information. I touched on the security side of vaccines at the beginning of this session. Can you assure me that no CCGs are prevented from communicating with their, for example, local MPs about exactly what is going on? I would hate that to be one of those rumours that grew and grew like Topsy. Can you give me an assurance that the CCGs are able to communicate entirely and fully with their MPs on everything that is going on with the vaccination programmes in their areas?

Sir Simon Stevens: I certainly hope that is right. As I say, we will make the local data available so that they are also able to track back what the uptake looks like in their local areas.

Q84 **Dame Cheryl Gillan:** And the quality control on the responses you have been getting from CCGs? Are you finding there is a variation around the country, or are you finding that the co-operation and the capability of all the CCGs match each other? Or are there gaps? If so, how will you plug those?

Sir Simon Stevens: It is probably about a week to 10 days too early to satisfactorily answer that question, because we have seen a big increase in the amount of vaccination going on in this past week, and there will be a further increase in this coming week. Until everybody has had a chance to really go hammer and tongs, it is probably unfair to read too much into any of the differences that might initially appear. We absolutely will be doing that, and we have mobile teams who are going around to help different services where we can see that they could do more or do it differently. As set out at the press conference that I did with the Prime Minister last Thursday, we also have 21 mobile Army units that are deployable under the command of Brigadier Prosser of 101 Logistic Brigade. That will make a difference.

Q85 **Dame Cheryl Gillan:** When you reach the point where you have been able to assess the performances across the CCGs, could you write to us to tell us how you have addressed and plugged those gaps? That is a very important area, and it seems to be another weak spot that we need to look at in the whole logistics system. I can see Dr Emily is nodding.

Sir Simon Stevens: All I would say is that it is not just principally CCGs, of course, but groups of GP practices through their primary care networks. In addition, there are the hospital hubs and the larger-scale vaccination centres, so individuals have choices; it is not just about the local CCG.

Chair: I think, Sir Simon, that Dame Cheryl raises an important point. A number of MPs have been frustrated about getting information on local data, with some suggesting that it is difficult to pin down precisely, or maybe feeling that they are not allowed to. The statement that you have made is helpful, but if you could make sure that that is clear, and that MPs, local councillors and local people can know what is happening in their areas, that would be very helpful.

Q86 **Dame Cheryl Gillan:** It is important to make the point that if constituents come to us and we go to a CCG or a group of practices, and they are not talking to us or telling us what is going on, we have nowhere to send those constituents except back to their GPs and back into the system, clogging it up. That is a major problem. We do not have those clear lines of communication so that we can quickly get accurate information to people. As the Chair says, I am not the only one who has experienced that. We need to ensure that those lines of communication are clear, if possible.

Sir Simon Stevens: Yes. In addition, we are also doing briefings directly for Members of Parliament on the vaccination programme. The public messaging is first and foremost, "You will be contacted." Unlike the later stages of the seasonal flu vaccination, when people go and present themselves to the local pharmacist, you will be contacted. That is the key point: "We, the NHS, will be in touch with you."

Chair: Sir Simon, everybody on this call, and other MPs, appreciate the national briefings, but what we need is local information. I think we have agreed that that is allowed and that you will sanction and facilitate that, which is fantastic.

Q87 **Olivia Blake:** My first question is to Sir Chris Wormald. What are the key risks to public confidence in the covid-19 vaccines?

Sir Chris Wormald: I think they are all the things that we have been discussing in this hearing. As we have just been discussing, the public want clear messaging to understand what is going on. They want to see delivery on the promises that the Government have made. They clearly want to be reassured that everything has been done properly in terms of the safety and the deployment of the vaccines. I think that this hearing has covered the waterfront very well.

I should say that although this is very different in scale, these are issues that Simon and his colleagues at the NHS deal with every year, with every vaccination programme. The key risks are very similar. The big differences are the scale and the newness of the supply chain—those are the things that are different from a normal vaccination programme. One of our huge

advantages is that the NHS has run programmes like this very successfully for quite some time.

Q88 **Olivia Blake:** Do you feel more could be done to address some of these risks? For example, I know that the report references attitudinal studies that weren't able to be carried out ahead of roll-out.

Sir Chris Wormald: The communication conversation that Dame Cheryl and Sir Simon have just had is absolutely crucial. The communication challenge is more difficult because the situation is evolving so rapidly, which brings us a communication challenge. The things they were talking about are extremely important. I will ask Michael Brodie to talk about the attitudinal work, which PHE is very well advanced on.

Michael Brodie: Thanks for the question, Ms Blake. We will be taking a range of attitudinal surveys. Under the NIHR programme, we have worked with Newcastle University and with the London School of Hygiene & Tropical Medicine. We do weekly YouGov polling as well. The synthesis of all that is that about two thirds of the population have said that they are very likely to take on the vaccine and about 10% say that they are very unlikely. The rest are a bit uncertain.

For those that are uncertain or unlikely, as Sir Chris pointed out, it is the efficacy and the safety. What we have found from the flu vaccination programme, particularly for harder to reach communities, is that it is around convenience and location, which is interesting. What you have heard from Dr Lawson and others today is the robustness of the booking system: people are getting their second appointments booked at the same time as their first appointment; the call and recall process is there; we have translated a range of materials into 20 different languages, including Braille and British Sign Language; and we have produced 44 different short videos to support people with information about the virus and the vaccination programme.

We have learned that people trust their GP, local faith groups and community connectors. That is where the directors of public health and local government have such a strong role to play. Working with our DPH colleagues will ensure that we provide the community cohesion and a community approach to helping address inequalities, as well as getting the mass volume out as well, so we don't have parts of the community being left behind. I hope that demonstrates the robustness of the approach that we have taken so far.

Q89 **Olivia Blake:** Thank you for that answer. On communities, there is a question about healthcare professionals taking it up themselves and also about learning disability. What support are you putting place to make sure that that community is not left behind? You have mentioned BME, so I don't need to ask about that, but I would like to understand a bit more about the invitation letters to the mass vaccination centres and whether they are counting as a vaccine offered. Could that skew indicators? What counts as a vaccine being offered? Is it a phone call, a letter or a text message? How are you monitoring that?

Michael Brodie: I will let Dr Lawson take the second part of question. On the health inequalities issues, we know from the work that we have done within PHE that covid amplified the role of inequalities, certainly for people with learning disabilities. It is an important question. May I come back to the Committee with a written note about what we are specifically doing for the learning disability community?

Olivia Blake: I would appreciate that, thank you. Dr Lawson?

Dr Lawson: On the question about offering, as Sir Simon pointed out earlier, we are giving people more than one channel and more than one chance to come forward for a vaccine. The letters went out and included language that said, "You may already have been invited by your GP. It is up to you to choose which is the most convenient opportunity for you."

Obviously, we pre-screened for people who did not already have a vaccination record, but they may have had it in the in-between period. We are not limiting the channel that people can choose to go through. Once you have had the vaccination, that will obviously be recorded, and the system wouldn't invite you again.

So, that is an offer. We are expecting, given the criticality of this vaccine, to go back to people who have not come, because we won't know why they haven't come, and to give them an additional opportunity to come forward, particularly via the national booking service. That is the easiest way for us to do that, because it calls immediately from the GP records, if people haven't already arrived for a vaccine, to send out another opportunity for them to do so, to make sure that we get to as many people as possible.

Q90 **Olivia Blake:** Just going back to Mr Brodie, it would be appreciated if you could specify actions around autism, as well as around those who are illiterate and those without an immigration status, in your response to us, unless you have anything to add on those issues today.

Q91 **Chair:** Just a nod, Mr Brodie, if you can agree to that.

Michael Brodie: Absolutely.

Q92 **Olivia Blake:** I am trying to tease out why flu vaccine take-up levels are a good indicator. How are you going to monitor up-take, and do you think that at the moment you are ahead of what was expected?

Sir Simon Stevens: Maybe I can start on that one, Ms Blake. The reason the flu vaccine is an interesting indicator is that, first, obviously it is for the same age group, and secondly, it has been happening at the time of increased concern about covid in the older population. So it is the right group of people and it is happening several months ahead of covid vaccination. That is why it is a leading indicator, but it is no more than that; it is not determinative of what the response will be.

At this point, a few weeks into the programme, we are seeing a very strong response from people aged 80 and above. In a way, that is completely

unsurprising, because this is the generation who were children when the health service was created in 1948; the generation who have lived through polio vaccination, tuberculosis vaccination and the advent of many other vaccinations that have come on stream, and they have seen the benefit. Frankly, I would be telling my children to learn the lessons of their grandparents, and my parents' generation are coming forward in very strong numbers.

Q93 **Olivia Blake:** Just to touch on the IT infrastructure for administering the programme, I understand that there is one central system that is not necessarily being used in all the areas we have. Dr Lawson, can you offer us some insight into whether you think the system is robust enough? Sir Simon, you might want to comment on that as well.

Dr Lawson: I am happy to start. The underlying record of whether you have had a vaccination goes into the national immunisation management service, which was pre-existing, and that information is then dropped into your GP record, on one of two major software systems. That means the data is then available and attached to your GP record, with all the information, which allows us to track the second dose. It also enables Michael's team to look at all the broader public health issues around this. The data is available for people to use in academic research—SPI-M is going to look at it, for example. That is the backbone that I think you are referring to.

What we have put in place, given the existing IT systems, are different ways for the data to go into NIMS. Hospitals are either using NIMS directly or using NIVS, which is essentially the same interface. GP services are using something called Pinnacle, which is a pharmacy software provision, but it allows the record of the event to be dropped directly into the NIMS database. The first mass-vacc sites are also using Pinnacle, because that was the right thing to set up, but we will look into them using NIMS and NIVS as we go through, for capacity reasons. It is not as complicated as I think it might seem.

What is absolutely critical is that we have the ability to know exactly which vaccine you receive, from which batch, on which day and in which place, for pharmacovigilance reasons. That is why that central backbone is so important and why every system we put in place has to talk to that system.

Q94 **Chair:** Can I just chip in there, Ms Blake? I know that in my local area there has been some delays in updating the records through Pinnacle to get that second invite sent out. Is that glitch something that is happening widely? Are you on top of that, Dr Lawson?

Dr Lawson: As part of our ongoing operational improvement, we are obviously looking at the data every day. What we have identified is that, because GPs and their teams are innovating in how they are using Pinnacle—they are splitting the tasks between multiple people in the surgery—the load of inquiries on Pinnacle was much higher than expected when we looked at our capacity this week. We might have nine different people all basically interrogating the Pinnacle system, and the team had not anticipated that.

Pinnacle put additional capacity into their servers over the weekend, and they will do that again on Thursday. We have now identified that problem, and we have put a fix in, but I would imagine, as we go through, that we will find another pinch point that we will need to innovate around as well. At the moment—

Chair: So you are sorting everything within a few days or so.

Dr Lawson: We are going to increase the capacity, but we are also going to plan for future robustness as we scale up, such as what alternatives would be available, how long would it take to put them in place to ensure that we have—

Sir Simon Stevens: Just to underline one point sitting behind what Emily is saying, the design principle in this programme was essentially to use the current well-tested local vaccination information systems, rather than to try and do some separate vertical big-bang IT project. The systems that Emily describes are the well-established systems that GPs and pharmacists and the rest of the NHS use for all sorts of other vaccination programmes. Obviously there are unique features here. The volumes going through are high, and there is a need to connect to the way the larger-scale vaccination services work through the national booking system, but this is not some new bespoke IT programme; this is essentially just using the resilience and experience that exists in a distributed way through welltested information systems around the NHS.

Chair: Thank you. It is quite different to other approaches by Government. Back to you, Ms Blake.

Q95 **Olivia Blake:** Yes, very different. Can I just ask about responsibility and where it now lies? I think it was a bit clearer earlier on who was responsible for what, but could you outline who you think has ultimate responsibility for delivery and how we can ensure that everyone is accountable for delivery?

Sir Chris Wormald: Shall I start? I expect Sarah Munby will want to add something. It is really quite simple. The BEIS side of the house and the Vaccine Taskforce is responsible for purchasing, manufacturing and delivering to the health system, and then the health family is responsible for delivery from there into people's arms. There is a very clear division of responsibility, and there is accountable officer agreement between me and Sarah Munby about all that.

As I said earlier, while that is a clear division of responsibility and means that everyone is focused on the things that are in their competency field, it is very important that each of those things is informed by the other. Therefore, people from the health family side of the house are part of the governance and oversight as part of the Vaccine Taskforce. Likewise, people from the Vaccine Taskforce are absolutely crucial to informing the delivery decisions that we make as part of our governance structures.

It basically works like that and, as I hope this hearing has demonstrated, it has worked very effectively so far. Personally, I think it is one of the best examples of cross-departmental working to achieve a single goal that I have seen, but Sarah may want to add something.

Sarah Munby: I have nothing to add but, for the sake of putting it on record, I agree completely with Chris.

Q96 **Olivia Blake:** Just finally, there has been some talk about batch testing holding up the supply of vaccines coming online. Is that accurate? Should more be done to improve capacity at the batch testing stage?

Kate Bingham: The way it works it that the MHRA does two things. First, it assesses clinical efficacy and safety to ensure that the data from the phase 3 trials actually supports the claims that the vaccines will actually protect the individuals who need it most and that it is safe for those people. Secondly, it ensures that every single dose of vaccine that is delivered is consistent and meets the quality standards that are defined by the regulator, which is why we cannot just ship in any old vaccine into the UK. Everything that goes into people has to be approved by the MHRA.

Now, you cannot do the batch testing experiments until you have the final commercial batches to test. These things are just sequential in how they are done. Everything that can be compressed ahead of time in terms of expecting and predicting what resources and assays and reagents are going to be needed has been done, but there are certain things you just cannot compress. For example, there are time-based sterility tests to ensure that no nasties are growing in the vaccines. You cannot compress those, because that is just a straight time thing. You can sing to the cells and do all sorts of things, but you cannot compress things further.

Again, everything that can be compressed and cut short through planning has been done, but we are not changing the fundamental bars of safety, which are completely mandatory. We make sure that the vaccines that we put into people meet the quality standards and have been approved by the MHRA. These are all things that in our steering committees we have been talking about for weeks and months. We knew that we have these different hurdles that we have to get through, and we have absolutely compressed what we can, but there is just a limit to what can be done, given the pace at which this is being scaled up.

Nick Elliott: I would like to put on record that we have been working very closely with both the suppliers and the MHRA in the form of NIBSC, which is its organisation that does the testing. I would just like to say that they have been absolutely fantastic all the way through. There has been no hold-up from what the MHRA has had to do in terms of releasing batches. For example, all the Pfizer batches were in this country by 23 December ahead of schedule, having passed all their batch testing. The same is happening now with the Oxford vaccine, so everything that can be done is being done.

Q97 **Chair:** Ms Munby, and maybe Dr Lawson, has there been any impact, or are you expecting any impact, because of Brexit on the supply chain of any of the vaccines that have not been manufactured in the UK?

Sarah Munby: I think that one is for us, in the sense that they are still with us at the point at which they come over the seas. The answer is no, but as you can imagine we have had very extensive, multi-layer contingency plans in place, including air freight if necessary, so it is not something that even if there had been significant delays at the border we would have been worried about fundamentally disrupting the programme.

Q98 **Chair:** Is it practical to air freight the Pfizer vaccine because of the cold storage?

Sarah Munby: *indicated assent.*

Nick Elliott: It is okay. We managed to get all the Pfizer vaccine into the country at the height of the borders being closed because we had contingency plans in place. As I said, all Pfizer vaccine was in-country by 23 December. That included transit over the period when the border was going through its issues.

Q99 **Chair:** Great. That is heartening to know. Back to you, Ms Munby. I want to move on to the Vaccine Taskforce, and why it was necessary to establish one. Was it that the system did not have a system good enough in place? What was the thinking behind setting up this particular Taskforce?

Sarah Munby: One second of history first: in April, really quite soon after the whole thing kicked off, Sir Patrick Vallance brought together a group of experts to look at vaccines. We had people in the Department who work closely with our researchers working on it. There was activity happening across the system. What I think became quite clear quite fast was that this was a huge, cross-Government, at pace, at scale effort.

No, the Government do not have a standing pandemic vaccine function at the kind of scale of the VTF that exists all the time. It would not be a good use of people or money to have that wait for decades for the moment to come along. The answer is to be able to build fast when you need it. The VTF was created in order to give senior focus, the right governance, and the right people to a really big cross-Government problem.

Q100 **Chair:** Was it part of pandemic planning? A decade ago, or just over that, I remember sitting on a Cabinet Sub-Committee dealing with pandemic planning. Was it something that was in the plan to have a taskforce like this bringing 200 people or so together to deliver, or was it something that you did on the hoof? I say "on the hoof"—that sounds pejorative. I

mean that you had to do it quickly. Was it something that you thought of in the moment or had you had any planning in the Department?

Sarah Munby: I don't actually know the answer to that question. I would say that at the time it was made it wasn't a particularly difficult or tortured

decision to create the VTF. We needed a function, and we were able to set it up quickly and efficiently, so we did so.

Chair: Okay, so—

Sir Chris Wormald: I can possibly help, Chair.

Chair: You have been around a long time. You have a history.

Sir Chris Wormald: Thank you very much.

Chair: That is a positive thing! The civil service moves on too fast most of the time.

Sir Chris Wormald: I have lost my thread now!

Vaccines have always been part of the pandemic plan. Of course, as you know, the major planning that was done was for a flu pandemic, for which there are pre-existing vaccines, so the question would be one of converting. Here, we were in a situation where we had a pandemic with a disease class for which there has never been a vaccine, so it was a rather different challenge. There was lots of planning for vaccines and vaccine deployment, as I said before, building on what the NHS does anyway. There was a unique challenge here to which a unique solution was developed at speed, but it was building on what was there already. For example, the permanent expertise that the Government has in the purchasing of vaccines in PHE and elsewhere was at the disposal of the Taskforce. It was new, but it was building on what was there already.

Q101 **Chair:** Starting with Sarah Munby, but do deflect to other permanent secretaries or Sir Simon if necessary, you have this Taskforce that has done a challenging job, bringing 200 people together, including people from outside Whitehall—I think 79 of that 200 were from outside Whitehall—but how are you going to ensure that you are up to speed, continuing with the current vaccine programme, but also potentially having to procure new vaccines for the different variants? Will it become a standing part of the Government?

Sarah Munby: Certainly for the moment, yes. The Vaccine Taskforce is still in existence. It still has over 200 people working in it. It is going at absolutely full pelt. We have no plans to change that. Clearly, if in due course it became obvious that this problem had become much more straightforward, you could find a different solution, but you would certainly scale it down. This comes back to the uncertainty about what the future vaccine programme will look like, depending on the progress of both the virus and the technology.

Q102 **Chair:** One of the interesting things about this, of course, is that it brought together people from inside and outside Whitehall. On this Committee we often talk about the skills in Whitehall, and you wouldn't have people of Ms Bingham's experience sitting around in Whitehall as a civil servant and not doing this. However, there are challenges when you bring people in from

the private sector, and one is keeping them standing when you need them. How are you doing on holding on to or ensuring access to the private sector expertise that you think you need?

Sarah Munby: To date, we haven't had problems holding on to private sector talent, because this issue is the absolute No. 1 national priority. The best way to motivate and retain people is to give them something that really matters to work on.

Q103 **Chair:** Okay, but one of the challenges of having people come in from the private sector and then go back out again, with access to Whitehall, is that there can be huge issues around conflicts of interest. I will come to Ms Bingham in a moment and some of the challenges that she has faced in that respect. How do you manage that as a permanent secretary? You are the accounting officer responsible for the expenditure, but the Vaccine Taskforce was really driving this through, so where did you fit? How do you ensure that when people leave they are not making money out of their Whitehall knowledge that is not necessarily benefiting the public sector? It is challenge that we have grappled with on this Committee for some time, so how are you grappling with it in real time?

Sarah Munby: Just before I get on to conflicts of interest and how they are managed, I think there was a smaller question in that about the fundamental accountabilities. It is worth saying for the record that the formal accountability runs very clearly through Nick to me. That is the setup here. There isn't a different structure. All the decisions about what is value for money, what should be signed and so on have gone through the standard departmental projects and investment committee that advises me, have gone through my sign-off and have gone through ministerial sign-off. I say that to put to rest any concerns about the way the formal accountability works.

Q104 **Chair:** Okay, but it is interesting you say that because, as the Report lays out, we know that that is what officially happens. I will come to Ms Bingham in a moment—I do not want to talk about you without talking with you—but if there had been a disagreement between the chair of the Vaccine Taskforce and the civil servants through the accountability line, how would you have managed that as a permanent secretary?

Sarah Munby: In the same way I would manage a disagreement between, say, two of my DGs in the normal course of doing business. I would look to understand what the issue was, talk to them and attempt to reach a sensible, balanced answer, but ultimately, the accountability and the decision-making lies with me reporting up to the Secretary of State.

Q105 **Chair:** Sir Chris, in terms of accountability, you obviously have a big part in that as well. Are you content with the accountability processes? How do you make sure that conflicts of interest, which I need to come back to Ms Munby on, are managed?

Sir Chris Wormald: It is the same answer as Sarah has just given. We have not changed the accounting officer structure or the ministerial decision-making structure for any of this, other than, as you know, adding an extra accounting officer who comes to this Committee quite a lot. Other than that, we have used exactly the same structures that we normally do.

As Sarah says, you manage the conflicts of interest in the same way as you would manage any conflicts of interest. DHSC faces that challenge the entire time. As you know, we have a very, very large drugs budget in the normal course of events, and we need expertise from the pharmaceutical sector and elsewhere to be able to deal with that. You manage any conflicts that arise via the standard procedures.

The general principle, from what Sarah has said, is exactly right. The important thing in these situations is that you double down on the existing systems; you do not create new ones. It is creating that balance where the Government can get the advice that it needs while ensuring that decisions are taken in the proper way by the proper people.

Q106 **Chair:** Ms Munby, I will come back to you on conflicts of interest. Some 38 members of the Taskforce registered a potential conflict. Can you tell me whether that was split across people who had come through the civil service and people from the private sector, or was it more in the private sector? I imagine it might be more in the private sector.

Sarah Munby: The majority of those would have been through colleagues brought in through the private sector. It is important to say that in a lot of those cases, the conflicts of interest that we are identifying are small. That does not mean that they do not need to be managed—they absolutely do need to be managed—but it might be something like, you have a shareholding in a particular company. You declare that, and we ask you not to trade in that company for the duration of the information being relevant. It is not necessarily a major conflict of interest that goes to the heart of your role. If it were, obviously you would not be able to do that role.

Our business-as-usual conflicts of interest system needed to be scaled up to deal with the quantity of people coming in—not particularly because they have been more conflicted than usual, but because there have been more of them coming in from the private sector; the Vaccine Taskforce has had some dedicated people focused purely on the question of conflicts of interest to deal with that scale of flow. I do not think, however, that we have had to change the usual process that we use to make sure that we examine, understand and take individualised mitigations for each person who declares a particular conflict of interest. I think it has worked well.

Q107 **Chair:** I will turn to Nick Elliott, then I will come to you, Ms Bingham. How have you made sure in your role in the civil servant accountability line that people who have left the Taskforce have not had any inappropriate personal or professional profit as a result of their work? How are you policing that?

Nick Elliott: When they leave, there is a process that everybody goes through in terms of making sure that they are signing non-disclosure agreements and that they understand what they signed up to over the time that they have been working for Government, so they are very clear about it. Over and above that, I think it is quite difficult to actively police it, but people are very clear about what their responsibilities are at the point at which they leave. We make sure that that is done as part of the organisation and the discussion that happens when they leave the—

Q108 **Chair:** Have you had to put any people on gardening leave so that there is a buffer between what they were doing with the vaccine programme and Whitehall and what they go and do later?

Nick Elliott: We have not had that yet, but we have not had a huge amount of people leave—other than Kate, who I am sure we will come on to in a minute. Most people who we have brought into the programme are still working on the programme. We have not had a significant number of people leave from the private sector at the moment, so it has not been an issue that we have had to face yet.

Q109 **Chair:** Ms Bingham, you have had a rocky ride. You have been criticised for the connections you have, and yet what you are doing is quite a rarefied area of work. When you got the call from the Prime Minister, did you think that you were the only person who could do it? Are there lots of people in your sphere who could have possibly been the chair of the Vaccine Taskforce?

Kate Bingham: My reaction when I first got the call was to remind them that I am not a vaccines expert. My role over the past 30 years has been taking novel science and turning those into therapeutics—drugs that are treating patients with actual diseases, as opposed to vaccines, where you are prophylactically giving them to healthy people. There is a distinction in terms of business model and what the ultimate product is, versus what I am used to. Are there other vaccine experts out there? Of course there are, but what I now realise is that the venture capital skillset and the biotech mindset is exactly what was needed. What I spend my life doing is basically surveying new science, products and biological areas, working out how you can actually evaluate those—for therapeutic intervention, in my case—showing that they are effective and safe, and making sure you can make them and get the regulatory approvals so that you can start to dose.

The concepts and the activities are the same as with vaccines, but the first reason why I think a biotech mindset and a VC mindset is helpful is that my experience is that we invest our own money. Every cent of my investors' money includes my own money, which means we are very focused on not funding stuff if we do not think it is going to succeed, on making sure things do succeed, and on doing things quickly. Because I have been in the industry for a long time, obviously I have a very broad network of people across biotech and pharma, which meant it was very easy for me and the team to pick up the phone and speak to people. Are there other people better qualified? I am sure there would be.

Q110 **Chair:** So you got a call from the Prime Minister. We know that in a pandemic, you cannot go through a full recruitment process, but do you think you would have been saved a lot of pain if there had been some discussion with other people about taking up the role? Do you know if there was discussion with other people?

Kate Bingham: Remember that I was on the vaccine expert advisory group first, and that was not an appointment process either. I had attended all of those meetings for probably four to six weeks previously, since it was first launched, so I imagine—I am not privy to whatever process took place—there was a discussion that initially looked at the members on the vaccine expert advisory group, because they were the people who had been most exposed to what the Government were doing and seeking to do. Maybe because I am "B", I was early on in the list; I do not know. I do not know what the process was; I just know that I received the call, and I made the point that I am not a vaccine expert, but in hindsight I think I do have some of the skills that have been helpful.

Q111 **Chair:** Ms Munby, were you at all involved in the appointment and looking at the people and expertise around, and how did you decide who would go on to the original vaccines body before the Taskforce was set up?

Sarah Munby: I was not privy to this specific appointment, although I very much agree with Kate that in hindsight, it has turned out to be a

rather good one in terms of efficacy of the Taskforce operation. We owe a big thanks to Kate, alongside all of the other members of the Vaccine Taskforce, for everything they have done. The external advisory board—which was appointed before the creation of the Taskforce, the appointment of the DG and so on—was appointed in consultation with Patrick Vallance, and the names of who is on that group are public. You can look at them yourself, and you will see a broad range of different representation from business, academia and others.

Q112 **Chair:** It is just that we know there are names that get floated around in Whitehall appointments. I have been involved in appointments in one way or another for nearly 25 years, and the same few people come up again and again. That might not always be a bad thing, because sometimes people are very expert, but it can mean that other people get cut out. We will leave that bit there for now, but in terms of what you have learned from this, Ms Bingham, would you do it again?

Kate Bingham: Yes, I would absolutely do it again, because I think we have been incredibly successful. We have been able to deliver the three objectives that the PM set: secure vaccines for the UK, secure vaccines internationally, and put in place plans to make sure the UK is better set up for the next pandemic—there will be another pandemic, and more so— than we are now. I am very happy with what we have done, so yes, I would. Even knowing what I know now, I would still do it again.

Q113 **Chair:** Did you think there were any conflicts of interest? How did you handle that when you were first appointed? Did it cross your mind that this might be an issue?

Kate Bingham: Remember, I am regulated by the FCA, so I am highly attuned to conflicts of interest. Just to give you an example, any company with whom we have had a discussion at the Vaccine Taskforce immediately goes on to my restricted list at SV, so I am not naive when it comes to understanding conflict.

Having said that, I do not invest in prophylactic infectious disease vaccines. It has not been a historic area of focus of our fund, nor is it likely to be in the future. Although companies like Johnson & Johnson and Janssen are big vaccine providers, they are also big pharmaceutical companies, so the fact that I have relationships there has been helpful for the vaccines, but it is not something that relates to my underlying work as a venture capital investor.

Q114 **Chair:** You say it is unlikely that SV Health is going to invest in any of these, but there is a little equivocation there. Are you ruling out that you would invest in vaccines in the future, having gone through this process, or are you saying that you might?

Kate Bingham: No. Prophylactic vaccines for infectious diseases are not something that we will invest in. The ambiguity comes where you have companies that have drug discovery platforms that could be applied, such as Moderna—we are not an investor in Moderna, and we are not going to be investors in Moderna—or BioNTech. Those are companies that have had their mRNA platforms validated through the covid-19 vaccines. If you went back a year ago, their business models have nothing to do with pandemic vaccines. They were to do with treatment of cancer or other infectious diseases. The ambiguity in the future is going to be companies where their platforms could be applied, in the future, to pandemics.

It is not quite that you are either in this box or that box. As part of my disclosure, we have gone through every single company that I personally or SV funds have invested in. The schedule includes every single company, a description of the company and whether or not there is any risk of potential conflict. Where there is anything that looks concerning, there was a discussion about what mitigations, if any, could be put in place.

Sarah Munby: I might just come in here as the decision maker on what we have asked Kate to do to manage her conflicts of interest. To endorse what she says, 98% or 99% of Kate's normal activities have nothing to do with anything that the VTF does and there is genuinely no risk of conflict, quite apart from any actual conflict.

We identified a very small number of specific portfolio companies where there was the possible risk of a future conflict, and we asked Kate to remove herself from any involvement with those specific portfolio companies. I

emphasise that that was a very small part of Kate's overall private sector role. I think we have managed any risk very carefully indeed.

Kate Bingham: Just to be clear, those were not to do with vaccines. They were to do with passive antibody approaches or therapeutic approaches.

The grey area is the passive prophylaxis for patients who are immunosuppressed, whereby if you give them a vaccine, they don't have an immune system to be able to respond to a vaccine. Those individuals could receive prophylactic antibody cocktails. They can also use those antibody cocktails for treatment.

Basically, any company that has an ability to do antibody drug discovery or platform-based discovery to provide that same passive prophylaxis, could theoretically fall into the vaccines. They are not vaccines, but they could be used to treat immunocompromised people. That is the area we have mostly focused on, because we do not invest in vaccines per se, so there is no disclosure per se on vaccines.

Q115 **Chair:** Can I just ask briefly Ms Munby and Ms Bingham, before I go back to Sir Geoffrey, about this interesting approach? There is a natural defensiveness in the system against bringing in people from outside Whitehall, from the political side as well as the Whitehall side. Have you learned any lessons about how to use this sort of taskforce? Is there anything you would do differently, or do you think you could deploy this in other areas of Whitehall?

Sarah Munby: I would like to slightly challenge the idea that we don't bring people in from outside Whitehall. We bring in people from Whitehall all the time. Indeed, I myself was in the private sector much longer than in Whitehall; Nick has been too.

Q116 **Chair:** You are all putting your hands up. Ms Munby, Permanent Secretaries do not survive for very long when they come from outside the system, but let's not get drawn into that.

Sarah Munby: Thanks for that encouragement. I will aim to buck the trend.

Putting that aside, this has been a different model. What has worked really well? The first thing that has worked really well is just focus and commitment from a senior and diverse group, bringing in lots of skills, with one job to do well. We know from any organisation that when you have that set-up, you are more effective. It is worth saying that we cannot just replicate that across everything that we do, because not everything we do can be the No. 1 nationwide priority all at the same time, but where we have that, bringing in a focused group and Nick to lead it as a dedicated DG, for example, works really well.

Q117 **Chair:** Is there anything you think that should be done about the way that roles like that are recruited to? Obviously, this was an emergency, but that does not necessarily mean that you should let down every guard without

going through some sort of process to prove fairness in a recruitment process.

Sarah Munby: Clearly, if you were in a slower emergency—if that makes sense, that slower burns are still critical issues—you would expect to go through a normal recruitment process. I think this was unusual in the combination of the pace and the seriousness.

I wanted to pick out a second point that I think worked particularly well. Kate talked about speed and the need to act quickly in all of this. Sometimes, you can perceive a trade-off between speed, and governance and control. What we did really well, specifically on the VTF, was accelerating our governance processes so that we could make decisions quickly but in a well-governed way. For example, having the sign-offs on the vaccine contracts done by the ministerial panel brought together the relevant Ministers into one room to make a decision. That is a good example of good governance combined with pace. There is something to think about in how we do that more in the things where speed matters.

Q118 **Chair:** Ms Bingham, what do you take away from this? Having had your foray into Whitehall, what do you think that Whitehall has to learn from this process?

Kate Bingham: The first point you made in your previous question was that the same old names get suggested for roles. I am not a same old name; I have no political experience and I think that part of the reason that we have been able to be effective is precisely that I do not know what the boundaries are. I am sure that I have trodden on all sorts of people's toes, because I wanted to get on with doing the job, which was to get vaccines as soon as possible. I am not sure whether that was your suggestion, that I had been a Whitehall groupie, but I am certainly not a Whitehall groupie. Because I do not know the rules, I just get on with what I have been asked to do.

In terms of lessons, I think that the key lessons are actually the political ones. I would not change anything that we did on the work to secure the vaccines, on the work on supporting the rapid development of those vaccines—the NHS registry, the human challenge, the standardised assays and, now, emerging, we will start the heterogeneous boost assays—or on the preparation of and support for the UK manufacturing industry. There is huge scope both for pandemic preparedness and for economic growth.

Those are things I am very proud of. The team has been phenomenal. Nick and the group, our steering committee, have brought skills from defence procurement, manufacturing, delivery, clinical and regulatory, and international, which have been spectacular. That has worked incredibly well.

The areas we have fallen down on have been the political savvy and the fact that there have been challenges that seem to be politically motivated—suggesting exactly the line of questioning you were going after, which is, have you got the job because of who you are related to or who you know,

rather than whether you are competent? I do not think that we handled that particularly well.

If I had my time again, I would be more insistent that we did cross-party briefings, because those did not happen, and that anyone who wanted to know what we were doing, how we were doing it or wanted to kick the tyres within Westminster should be free to do so. As the Vaccine Taskforce, we should be free to respond—our ability to communicate is still within what BEIS has to approve, No. 10 has to approve, and that takes time to happen. These are not political communications, by and large. We are talking about vaccines, which do not respond to political borders.

Q119 **Chair:** It is interesting, though, that you use the phrase "politically motivated", because I think it is a question that lots of people have. You raised it; you are married to somebody who is close to the Prime Minister—who is a Minister, indeed. People will ask that question. Did it not occur to you when you picked up the phone and took the job offer that you might get criticised for that connection, despite your own professional background?

Kate Bingham: Of course we understood that, but I would challenge you to go around the Treasury and ask how many people, before I was appointed, would even have been able to name me as being married to Jesse. I am not in the political set and I do not spend any time doing it. People in my sector know exactly who I am, but people in politics do not. Of course I accept that there will be questions, but I think you have to look at the track record and my background and the fact that I was on the vaccine expert advisory group beforehand. I am on the life sciences industrial strategy Government advisory group as well. Through British Patient Capital you have actually invested in two of my funds and named me as a key person, so I am known to Government, but I am not a political person in any way or form.

Q120 **Chair:** Could I just ask, though, whether you had met the Prime Minister before you took on the role?

Kate Bingham: Yes, we were direct contemporaries at Oxford—or maybe I was a year above or below. Anyway, close enough.

Q121 **Chair:** I think no one can doubt, from what you have told us today, your expertise and what the achievement is, but I think it is a fair question. You were at university with the Prime Minister and we know that those networks mean that people make phone calls to people they know sometimes. It is a fair question that people have asked, and I do not think that it is something to be defensive about.

I think you have made a good fist of arguing your point on that, but there is a danger that this Prime Minister has sometimes made calls to people he knows. All Prime Ministers have a tendency potentially to do that. We need to question, and it is right that we do that on behalf of the taxpayer. Though

ultimately Ms Munby was responsible, you were effectively spending taxpayers' money, so it is important that we ask those questions.

Kate Bingham: Just to be clear, I am not spending taxpayers' money; I am organising the work to make recommendations for the Ministers to make the decisions. Remember that I am unpaid.

Q122 **Chair:** Even being unpaid, you are still accountable for the decisions and actions that you have taken. I think you would agree with that.

Kate Bingham: I am accountable for the strategy in the work we have taken, yes. The actual decisions on procurement are made either by the Ministers or by BEIS.

Q123 **Chair:** We could go down that squirrel hole on this Committee about who is responsible for what in Whitehall, because we often have that discussion about Ministers and who actually makes decisions, but thank you for that Ms Bingham. Ms Munby, you wanted to come back in.

Sarah Munby: Only to say that, ultimately, I think it is important for the record to say that Kate received the call and she answered it and came and did good work. The question of whether she should or should not have been called, which I think we have discussed now, is not for her to answer.

Chair: Well, I think she has managed to answer very well for herself, if I may say so, Ms Munby, but thank you, Ms Munby and Ms Bingham.

Q124 **Sir Geoffrey Clifton-Brown:** We have had a long session on this very important subject. Just a few questions to wrap up. First, to Dr Lawson, it appears in behavioural terms that the younger groups are not adhering to the guidance as much as the older groups. It looks as though the take-up of the vaccine is going to be quite high in the older groups, but we know that those under 65 were only 45% of in the flu vaccine take-up. Are you worried that the take-up will decline as we get down the priority groups, and what action are you going to take to prevent that?

Dr Lawson: I should say, first of all, that there is a cross-Government communications team, which includes those from the Vaccine Taskforce and the Cabinet Office, for example, led by the DHSC, that is looking at all the issues of communication around the vaccine. I am happy to give a view, but it may be that we want to ask the question more broadly as well.

The polling that was referenced earlier has shown that the UK has one of the highest, if not the highest, openness to vaccines of any country in the western world, with 82% of people saying in a survey last week that they would either consider or strongly rush towards getting a vaccine, so we start in an incredibly powerful position. As you say, that is highest in the older age groups but one of the ways to increase vaccine confidence and vaccine uptake is for people to see their grandparents, their teachers, their uncles and aunts, et cetera, getting the vaccine and for that to start making a change in how we are all able to live. We think the best strategy is to do this and do it really well and safely, and make sure that the whole

atmosphere around the programme is one of an effective mass vaccination programme that really changes how the country is able to operate. That that is what we are focused on.

The JCVI published some helpful guidance about what it takes to run a successful mass vaccination programme, which includes that operational delivery angle, as well as very straightforward cohorting and openness to take the vaccine. Those are the guidelines that we are following collectively across the programme.

Q125 **Sir Geoffrey Clifton-Brown:** Thank you very much. My next question is to Nick Elliott. This RNA technology for vaccines is entirely novel. Is it only suitable for SARS-type viruses, or could it be replicated to deal with a wide range of different viruses?

Nick Elliott: I might pass that one on to Kate, but my understanding is that it could be used for a wide range of different viruses. It provides us with lots of flexibility for the future. It is a quite exciting new development in the response to these type of challenges. Kate, do you want to say anything further?

Kate Bingham: What it is, basically, is a piece of genetic material that allows the cells—to translate those into proteins that basically make a bit of viral protein, which is then recognised by the immune system and generates that immune response. It doesn't matter what it is. You can deliver any form of genetic material in this format. It is suitable for viruses, but it is also suitable for cancer. It is suitable for anything where you want to stimulate an immune response against a specific protein.

Q126 **Sir Geoffrey Clifton-Brown:** In "Political Thinking with Nick Robinson" last week, you talked about the UK needing to scale up a bulk antibody manufacture. How is your work on the Taskforce leading to that possibility?

Kate Bingham: We started a market engagement process when I was still there. I do not know where that has got to now, but what was set out was a discussion with industry to say, "What are the options for the Government to work with industry to create that bulk antibody supply?" It is not just for prophylactic treatment for immunosuppressed people; it could also be used for therapeutics. Biotherapeutics, or basically biologicals, as drugs are becoming an increasingly important part of treatment in medicine today. I do not know if Nick or Sarah can update you on where we got to, but the market engagement started in November.

Q127 **Sir Geoffrey Clifton-Brown:** Perhaps they can when either you or they answer this question. Is this the real bonus that we might get from this whole unfortunate Covid-19 episode, through setting up this whole new industry?

Kate Bingham: For sure, and that is why it is so exciting. We are the only western country to show that we can take academic science and turn it into a commercially industrial, consistent and approved vaccine. To go from academic to launch in less than a year is phenomenal. We have the

underlying science and we have all the different bits, so that we can make the vaccines, whether they are viral mRNA protein or whole virus, plus then antibodies. We have state-funded groups, such as the Centre for Process Innovation up in Darlington, which have those additional capabilities to support the supply chain.

Combine that with the capabilities we have in the UK through the NIHR, where we have national clinical trial networks. Again, the fact that every single person has an NHS number and we are able to bring people into trials in the way that we have sets us apart from the other countries.

Finally, on genomics, the UK has sequenced more of the strains of Covid19 than all the other countries put together.

Lots of what we the UK have been able to pull together comes from existing Government-funded institutional activity. It is just very exciting. The idea that we can come out of this stronger than we went in is absolutely something that we should be shooting for. We need to ensure that next time a pandemic comes along, we treat this like just another flu jab, because we have all the bits in place, everyone is talking to each other and it works well. That will set us up incredibly well.

The one bit I have not mentioned is the MHRA and the fact that they have shown their nimbleness and co-operative working with the different vaccine companies, as well as pharmacovigilance, which is about assessing the safety and efficacy of the vaccines once they have been deployed. That is fundamental to public trust in vaccines. It really matters that we do this properly and that in future we manage the analysis of how the vaccine has performed, because that will affect what future vaccines we want to give, as well as understanding what the best regimes are, how we do it and how we can best protect the population. That will be relevant for every country around the world. Again, very few countries anywhere have the same capability as we do in the UK.

Sir Geoffrey Clifton-Brown: Ms Bingham, I am going to leave it there. I have done hundreds, probably thousands, of these PAC inquiries, and may I say a big congratulations to you and the whole of BEIS and the NHS for putting the UK in the world lead in this field and finding a probable solution to this dreadful period that we have been through with the Covid virus. Many congratulations and thanks to all of you.

Chair: Thank you, Sir Geoffrey. We all echo that. Dame Cheryl.

Q128 **Dame Cheryl Gillan:** I echo that entirely. One of my colleagues in our back chat has asked how we deal with the messages that come from frontline staff who hear people saying, "I'm waiting for the British vaccine". I don't know whether anybody has a comment to make on that, but I think we need to significantly communicate that there is so much British invention and science in this that we should be rightly proud of it. I echo everything that Sir Geoffrey Clifton-Brown said.

This is a pandemic. This is international. It knows absolutely no boundaries, sadly. For once the UK has actually done the procurement of the vaccine doses on behalf of the devolved nations: Scotland, Northern Ireland and Wales. Of course, although this is an English Select Committee, we are missing a vital piece of information. I wonder whether the permanent secretary, Sir Chris, could provide us with the same figures on the devolved Administrations—Scotland, Wales and Northern Ireland—as we have had today. I want to know how many doses of vaccine they have received and how many, as of today, they have delivered to their population, and how they are doing on their targets. I think that if we narrow ourselves down to this little England vision, we are making a big mistake. We are a United Kingdom and this virus goes across all borders. It was the United Kingdom Government that made the procurement. Will Sir Chris comment on that?

Sir Chris Wormald: I do not have those numbers with me, but I am happy to work with my devolved colleagues to provide them to the Committee. The way this works is that the Vaccine Taskforce and BEIS side of the house is, as you say, UK-wide. The delivery is with the four jurisdictions and the four NHSs. That said, we have worked very, very closely with our devolved colleagues on a whole range of issues. The four CMOs group, which has been a very powerful and successful group during the pandemic, discusses this all the time. We discuss it on the administrative side, and the four NHSs discuss it, both to keep what we are doing aligned and for the obvious cross-border issues of people who don't fit neatly in the four jurisdictions. Again, this has been one of the most successful areas—there have been several in the pandemic—where we have co-operated across all jurisdictions with, as you say, a very clear UK role and some very effective working at four-jurisdiction level as well, which is as it should be.

Sarah Munby: To add one simple point, which is probably clear to everybody, where we have been purchasing on behalf of all of the nations, the doses are split by population, so everybody gets the right share throughout. There is no challenge around needing to choose or prioritise. It is going proportionally not just to the four nations, but to overseas territories as well.

Q129 **Dame Cheryl Gillan:** Scotland is getting 8.2% based on population, as I understand it, but what is important is that we need to know about the efficacy of delivery as well, because otherwise we do not have that holistic picture. And because it has been a UK-wide procurement, we need to be able to reflect how well that UK-wide co-operation is going and how we have been able to bring the four nations together during this terrible time.

Sir Simon Stevens: If it is helpful, I can come in. I think I am right in saying that the Scottish Government have published their cumulative figure for today; I think their number is 163,377 doses administered in Scotland. And I think the number in Wales may be 86,118.

Dame Cheryl Gillan: Thank you. Could we just confirm those? And I

think that to have a running total of the figures—again, in terms of communication—will give us a much better picture across the whole of the United Kingdom.

Q130 **Chair:** Sir Simon, as you are on the microphone, could you pick up the point that Ms Blake raised? We are now picking up something that people have been saying; there's this line "I want the British one" or "I haven't got the one I want." That seems to be happening a little bit. I don't know whether you or Dr Lawson can give us any comfort on how you are going to communicate to people that the vaccine is the vaccine and it doesn't matter which one you get.

Sir Simon Stevens: The chief medical officers have all been very clear that both vaccines are excellent and each of them provides fantastically improved protection over not having it, and therefore please just come forward and accept the one that you are offered.

Chair: Great. Thank you for that. I think it is probably all you can say at this point, but that is certainly something to watch for. Sir Geoffrey, did you want to come in one last time?

Sir Geoffrey Clifton-Brown: No, I have finished, Chair; thank you.

Chair: Thank you very much. I say thank you to the Committee and thank you very much indeed to our witnesses. There are a lot of you, but as Sir Geoffrey said, you have pulled together in extraordinary times to achieve extraordinary things. There are big lessons here that we will hope to tease out in our Report about how well this has gone. That applies particularly to the lessons for going forward, as we are likely to face further challenges in the future. I can say to the witnesses that the Zoom call will end formally, but you will still be online for a little longer after I declare the meeting over.