

Select Committee on Science and Technology

Oral evidence: UK science, research and technology capability and influence in global disease outbreaks, HC 136

Wednesday 3 February 2021

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Members present: Greg Clark (Chair); Aaron Bell; Dawn Butler; Chris Clarkson; Mark Logan; Carol Monaghan; Graham Stringer; and Zarah Sultana.

Also present: Jeremy Hunt, Chair of the Select Committee on Health and Social Care.

Questions 1830 to 1969

Witnesses

[I](#): Baroness Harding, Interim Executive Chair, National Institute for Health Protection; Mark Hewlett, Director of Testing, NHS Test and Trace; and Steve McManus, Director of Tracing, NHS Test and Trace.



Examination of witnesses

Witnesses: Baroness Harding, Mark Hewlett and Steve McManus.

Q1830 **Chair:** The Science and Technology Committee is continuing its inquiry into the response to the Covid pandemic—in particular, questions of how we emerge from the current restrictions, of which NHS Test and Trace is a crucial part.

For this session, we are joined by our colleague Jeremy Hunt, Chair of the Health and Social Care Committee.

I am delighted to welcome our witnesses. Mark Hewlett is director of testing for NHS Test and Trace, a position he has had since he joined the organisation in August of last year.

Steve McManus is the director of tracing for NHS Test and Trace. He has been on secondment to the role since 12 August from his regular position as chief executive of the Royal Berkshire Hospital, following a career in the NHS since 1987.

Baroness Dido Harding has been head of NHS Test and Trace since May 2020 and chair of NHS Improvement since 2017.

Thank you very much indeed for coming to give evidence to us today.

As I said at the beginning, once we have most of the population vaccinated, assuming that Covid is still present, effective test and trace will be what stands between us and lifting restrictions, so it is really important that we know how the organisation is geared up to bear that challenge.

Baroness Harding, to start with some basics, what is the purpose of NHS Test and Trace?

Baroness Harding: It has two primary purposes. The first core purpose of NHS Test and Trace is to break the chains of infection and, as a result, reduce the rate of infection of Covid-19.

The second purpose is to use the data and insights that NHS Test and Trace generates to provide advice and analysis to the chief medical officer and government locally and nationally to make decisions.

Q1831 **Chair:** That is very clear. Will you briefly summarise the steps required to break the chain of transmission of Covid?

Baroness Harding: Testing, tracing and supporting people to isolate is not an innovation for Covid-19; it has been a tried and tested public health intervention for infectious diseases the world over for many decades. NHS Test and Trace is testing, tracing and isolating at extraordinary scale.

The means of breaking the chains of transmission are: to find as many people as possible who have the disease; reach those they may have infected, who would be infectious but might not yet know it; make sure



they isolate and do not infect anyone else; and, in doing that, ensure that each person who either has the disease, or is highly likely to get it and not be aware of it, does not go on to infect others. That is the way we impact the R number and reduce the rate of transmission of the disease.

Q1832 Chair: To be able to focus our subsequent questions, if we look at the specific elements of that—correct me if I am wrong or I miss out anything—the first is: making sure that anyone who needs a test, perhaps because they have symptoms, can get one as quickly as they can; secondly, getting the results of that test to them as quickly as possible; thirdly, obtaining the contacts of all positive cases; fourthly, contacting the contacts, as it were; and, fifthly, ensuring that they isolate. Does that seem to you a reasonable deconstruction of your tasks?

Baroness Harding: Yes, but perhaps I may add two pieces of context and one slight tweak to your process flow. Referring to the two pieces of context, what makes Covid-19 such a difficult disease to manage is that, first, the vast majority of people who think that they have it do not have it: a very small proportion of people who have Covid symptoms and come for a test have the disease. The majority of people who have the disease do not have symptoms.

As a first step in testing, the world has learned over the course of the past year that we need not only to encourage people with symptoms to come forward for tests but make available widespread asymptomatic testing so that those going about their everyday lives are testing regularly and we can find those asymptomatic cases—people who do not even know they have it. There are two steps to your “needs-a-test” piece that we have learnt a lot about in the past year.

There is a subtlety towards the end. I often say that I think that Test and Trace is a team of teams. The organisation that I chair plays a huge role in each of the steps that you have described, but in the end this is all about behaviour in that last stage—individuals isolating when they have been asked to—which is a shared responsibility for all of us rather than something that is individual to my organisation.

Q1833 Chair: Quite so. That is very clear and helpful.

Thinking about that chain of actions that need to be taken in order to break the chain of transmission, as you put it—in other words, to reduce R and have the pandemic receding rather than advancing—how quickly does the chain need to be executed from providing a test to isolating the contacts of people who have tested positive?

Baroness Harding: Every single person you isolate who otherwise would go about their everyday life contributes to reducing R. It is not a binary number in that you have no impact or completely succeed; there is a gradation. The targets that we have worked to since Test and Trace was established were set for us by SAGE.



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We have all learnt a lot about the disease since then and those targets did not include asymptomatic testing, but, if you are looking for each of the pieces, the most important element to increase the impact on breaking chains of transmission is the percentage of people who have the disease and enter the test and trace and isolate process. The first key performance indicator that we look at is the percentage of people the Office for National Statistics estimates contract the disease each day that we succeed in finding through testing.

Q1834 **Chair:** There is an important time dimension to it, is there not?

Baroness Harding: Yes. On the first piece of that time dimension, it is incredibly hard—I hesitate to say “impossible”, because most things in life tend to be possible—to determine the time between somebody starting to feel a bit sick or poorly and coming forward for that test. We are not able to measure that because only the individual will know it, but the speed at which everyone comes forward for a test is another reason more regular asymptomatic testing will speed up the end-to-end process.

If I come forward for a test only after I have been coughing and had a high temperature for four or five days and have been carrying on with my everyday life, it does not matter how fast the testing process is. We have lost a lot of time and transmission during that period. That is the first bit of time.

Let us put some numbers as well as theory to the next piece we are working to. As of last week, nine out of 10 people who came forward for a PCR test under NHS Test and Trace received their result next day. From memory, it was 95.6%, so the vast majority of people get the test result next day.

Q1835 **Chair:** Do people have those tests sent through the post?

Baroness Harding: No. Thank you for pulling me up on that; you are quite correct. Those are people who come for face-to-face testing.

Q1836 **Chair:** What proportion of the total number of people being tested get it face to face rather than through the post?

Baroness Harding: That is a very good question. Perhaps you will hold on a second if you want me to give the exact details. Last week, there were 636,000 in-person tests, whereas, rather unhelpfully, all routes, including satellites, which are deliveries to care homes, were 997,000 tests.

Q1837 **Chair:** Split that up between in-person and through the post. I am interested in the postal ones in particular.

Baroness Harding: I do not have the specific postal number in front of me, which was why I gave you the all-route number and pulled out the in-person number to give you a sense of the total. I wonder whether Mr Hewlett has the numbers in front of him while I try to find it.



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Mark Hewlett: The total number of people tested through PCR last week was 2.813 million, of whom 636,000 had in-person tests.

Q1838 **Chair:** A very small proportion of the total being tested were in person, so the 24-hour turnaround figure that you quoted, Baroness Harding—it is highly desirable, and the point on which we agree is that the sooner it is done the better—relates to the minority of the tests.

Baroness Harding: Remember, as I think Mr Hewlett is about to say, that 480,000 of our tests last week were through what is called our satellite channel, which is regular asymptomatic testing in care homes. Tests are dispatched to tens of thousands of care homes each week. The expectation of that channel is that the turnaround time is slightly slower, but there is an expectation of between 48 and 72 hours because it is a regular test conducted week in, week out, rather than a group of people with symptoms. The majority of people with symptoms are coming forward via face-to-face channels. A minority of people with symptoms get tests delivered by post.

Q1839 **Chair:** We will look at each of the stages and my colleagues will have some questions on that. To go back to the end-to-end process of the chain, in your view what is the optimal time for conducting it—from a test being requested to contacts being isolated?

Baroness Harding: The target that SAGE has set us is for 80% of contacts to be isolated within 72 hours of that chain—a target that we believe we are now hitting.

Q1840 **Chair:** SAGE has said that 48 hours is necessary for an effective test and trace system.

Baroness Harding: I am referring simply to the targets we were set at the beginning of test and trace. Obviously, the faster it is, the better. We continue to drive improvement in the end-to-end turnaround times. As I said at the beginning, I do not think that it is a binary—one is good, the other bad—but faster for every single test is always an improvement.

Q1841 **Chair:** What is your internal target for the end-to-end process?

Baroness Harding: It has been to hit the target SAGE set at the time of our creation in the summer. It is one that we believe we are now hitting and we are looking at how we can speed it up still further.

Q1842 **Chair:** The NAO report published before Christmas states that NHS Test and Trace developed internal targets that it would take 48 to 72 hours for the end-to-end process. Does that remain your internal target?

Baroness Harding: Yes.

Q1843 **Chair:** Against that target, what is the average number of hours taken for an individual going through the test and trace process—in other words, from requesting a test to having their contacts isolated?



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Baroness Harding: I am afraid that I am going to frustrate you in my answer, as we are in the process of quality-assuring that data and are not yet ready to publish it. I am very keen to have that full end-to-end data in the public domain.

As the Chair of the Health and Social Care Committee will remember, we had this discussion way back in June. For every piece of the statistics that we release each week, we work very closely with the UK Statistics Authority to make sure they are fully quality-assured and validated. To join up all the different clock counting to establish individual tests for end-to-end turnaround time is quite complex. We do believe that we hit the 72-hour target, and I am very keen to get that into the public domain as soon as I possibly can.

Q1844 **Chair:** The National Audit Office said that the median performance against that 48-to-72 target was 119 hours. Are you saying that is historical and that you are now beating it?

Baroness Harding: I am afraid that I do not fully recognise the NAO's calculation, as I think we have been clear, about the data to the end of October. As you can see, each of the component elements of test and trace has substantially improved over the past three months. Our test turnaround times, the percentage of our contacts that we reach and the time that it takes to reach contacts have all substantially improved over the past three months.

Q1845 **Chair:** How do we know that? I said at the beginning that in going out of lockdown we need to be confident that Test and Trace is going to take up the strain. The time taken for this process is absolutely foundational to that. The National Audit Office published figures showing that the average time was 119 hours. If you have more recent information, it is essential that it is communicated. When you appeared before the Public Accounts Committee in the middle of last month you said that that data would be published shortly. I have not seen it published. Can you tell us when it will be published?

Baroness Harding: I am very keen for it to be published as soon as possible.

Q1846 **Chair:** That was what you said to the PAC three weeks ago.

Baroness Harding: Indeed. To answer directly your first question about how we know that testing turnaround times and our contact tracing performance have improved over the past three months, you know that because we publish it every week. Last week, 95% of people received their test result the next day.

Q1847 **Chair:** People who appear in person?

Baroness Harding: Yes.

Q1848 **Chair:** It is very important to be rigorous about this. A lot of decisions on lifting lockdown and how quickly that can take place depend on how



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confident we can be in the strain with which NHS Test and Trace can take up the system. Therefore, to confuse a 24-hour performance of people testing in person with the overall tests is what concerns me, which is why I think that publication of the information on the performance of this end-to-end process that you promised to the PAC three weeks ago is essential.

Baroness Harding: I completely agree with you that it is important and essential that we are transparent about our performance. We publish over 50 KPIs on a weekly basis. You would find it hard to find any public, citizen or consumer service that shares quite so much data of its performance on a weekly basis.

As far as we are aware, there are no other test and trace services worldwide that publish as much information as we do on a weekly basis, but I share your desire to have the full end-to-end data in the public domain. I knew that I would be frustrating you and the Committee with my answer, but it is important that the end-to-end data is validated, appropriately quality-assured and published in agreement with the UK Statistics Authority, as we have done all along, for exactly the reason that you give: it is important that the public have faith in this data.

Q1849 **Chair:** Is it correct that the figures that you have just been giving the Committee have been about next-day results?

Baroness Harding: That is correct. We publish the turnaround times within 24 hours and 48 hours as well. I was simply giving you the next—

Q1850 **Chair:** The target you have been given to report against is 24 hours. The last time you appeared before the Committee you elided the next day with 24 hours. Given that is your target and that every hour counts, it would be very helpful if you could be consistent in giving the figures against the targets you have been given.

What is the percentage of turnaround times of test results within 24 hours, which is the target you have been given?

Baroness Harding: In-person tests within 24 hours last week were 70.8%, so 480,375 tests came back within 24 hours. While I agree with you in principle that every hour counts, for all of us as real people whether we get a test result at 3 in the morning or 8 in the morning when we wake up does not make a huge difference. The feedback that we get from people coming forward for testing is that knowing that they will get the result the next day is the thing that matters to them. That is not to take away from the 24-hour target at all, which we publish weekly as well, but the key thing is that you know you will get the result the next day.

Q1851 **Chair:** In response to the first question I asked, you said that the purpose of NHS Test and Trace was to break the chain of transmission. It may be the case that people would like to have the results the next day, but your purpose is not to give people peace of mind; it is to break the



chain of transmission, and these hours count because as every hour goes by you can start the next stage of the process, which is why it is very important that we should know what the end-to-end process is.

It is not just about whether your team is doing a good job in the abstract; we know everyone is working very hard on this, but this information is crucial for decisions that will be contemplated imminently on how lockdown restrictions can be lifted.

Let me ask one final set of questions before I turn to my colleagues. Referring to the business case you made in September for £15 billion of spending on NHS Test and Trace, you said that the main driver for the justification was the avoidance of a second national lockdown and vast associated social and economic costs from that. That was the justification for the £15 billion investment in NHS Test and Trace—to avoid a second lockdown. Shortly after that we had a second and third lockdown. Does that indicate that the contribution of NHS Test and Trace was not as you envisaged in the business case, which was to avoid that?

Baroness Harding: I do not think that it does, and let me explain why. It is entirely understandable that everyone wants a single, clear and straightforward route out of the Covid crisis. As you described in your introduction at the beginning of this hearing, it is very tempting to take the view that Test and Trace stands single-handedly to prevent the virus spreading and lockdowns, but we are part of an overall system. I have said this at each of my appearances before this Committee. Test and Trace is only one of the elements that enables us to fight Covid. We are not the single silver bullet. Between that business plan being published and going into the lockdown we are in now we have seen the virus mutate and a new variant emerge, which none of us was able to predict.

Q1852 **Chair:** The business case was very clear: the main driver of the request for £15 billion of public expenditure was to avoid a second national lockdown and the vast associated social and economic costs. It is true that we have a new mutation of the virus, but the second lockdown began on 5 November. The majority of cases that can be attributed to the new variant did not take place until the middle of December, so it is not true to say that the mutation or variant accounted for the need for the second lockdown. Was the justification on those grounds in the business case for the money to avoid a lockdown a mistake, or was the performance not what was envisaged?

Baroness Harding: The business case also sets out that Test and Trace operates in the system and plays a role, not the only one, in our work to avoid further lockdowns. I reiterate that our externally validated modelling shows that Test and Trace is having a material impact in the reduction of R, very much as planned, but we have delivered each and every one of the objectives set by SAGE, which we published in our business plan, and we set ourselves further stretching targets in the second business plan that we published in December.



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To turn it into numbers, in October, Test and Trace was reducing R by between 0.3 and 0.6. We are on track to reduce R in high-prevalence areas by between 0.6 and 0.8 by the end of March. That is a material contribution, but with a disease with an unconstrained R in March of over 3 it is impossible for Test and Trace single-handedly to fight the disease. It will always be one element of our fight against Covid, not the silver bullet.

Q1853 Chair: You stated the contribution to the reduction of R to the Public Accounts Committee, but you have not published the assessment. In the Science and Technology Committee of the House of Commons the practice of science is to be transparent and publish work so that people can verify and scrutinise it. I see no reason why that should be withheld from the Committee and the public.

Finally, when it comes to the new variant, far from this being a reason or excuse for not having the impact in avoiding lockdown, surely if there are more infectious strains it means that people themselves are more infectious and NHS Test and Trace needs to work even faster to contain it. Is that not the implication of the new variant?

Baroness Harding: You ask several questions. Perhaps I may take first the one about publication and then the implications of the new variant.

We expect the technical annexe to be published in the course of the next couple of weeks. We are very committed to publishing all the underlying data and analysis. We publish vast amounts of data every week, and we will continue to do so.

Q1854 Chair: You gave evidence to the Public Accounts Committee, a very senior Committee of the House of Commons, over two weeks ago, and it will be another couple of weeks. Why does it take a month to be able to publish evidence that you put in the public domain by dint of an appearance before the senior audit Committee of Parliament?

Baroness Harding: Simply because the work on documenting the detailed technical annexes needs to be properly quality-assured so that we are not in any way misleading when we publish all the detail.

Q1855 Chair: How do you know you were not misleading when you told the Public Accounts Committee that you were reducing R significantly?

Baroness Harding: Because we are quality-assuring not the calculation but the technical description of what we are doing. These are complex, technical calculations. We are extremely mindful that it is important that not only is the calculation correct, which we are confident it is and are not changing, but that the explanation of the analysis that has been conducted is easy to understand, digestible and helpful.

We work really hard at publishing data on a very regular basis. I challenge you to find another public service that is publishing its performance statistics, methodologies and is peer-reviewing all its



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publications as much as we are. We are very keen to make sure that the detail of all the modelling is available. Increasingly, through the Joint Biosecurity Centre we publish our workings as well as our conclusions so that people are able to challenge them, as is entirely appropriate. Would you like me to move on to your second question?

Q1856 **Chair:** For an organisation whose watchword should be speed, this does not seem to be a feature of your disclosure of the evidence.

Baroness Harding: I completely disagree with that, Chair. This organisation is nine months old and has been publishing weekly statistics within the first month of its existence. I would challenge you to find any public service in the world that has done it on that scale.

We have built a service. Over the new year week, we contacted over 1 million people successfully and found more than 300,000 positive cases. In extraordinary scale we have stood up this service incredibly fast, and the tens of thousands of people involved in test and trace across the country are working flat out to keep scaling and improving it. The one thing I would not accept criticism of is the speed with which we have stood up this service.

Chair: My point was the speed of disclosure of evidence that you gave to a Committee over two weeks ago and said would not be available for scrutiny for another two weeks.

Q1857 **Aaron Bell:** To follow up a couple of the points made by the Chair, on the R number you said that you were on track to reduce it from 0.6 to 0.8 by March. Clearly, you are not willing to give us a point estimate right now, but I have two questions related to that.

First, once you have the process in place, will that be published weekly in a bulletin? Secondly, could you give a technical description of how you are making that estimate internally, even if you are not able to give the number now? Which data is going into that estimate per hour and how is that coming out of your numbers, and any other information that you might be using to do that?

Baroness Harding: Let me take each of those two questions. I do not expect that we will publish the impact test and trace has on R on a weekly basis because it is a complex piece of modelling that needs to be done and then validated. In order to do that modelling, you need to establish the counterfactual. What would happen if you were not doing test and trace? Could I suggest that, rather than give a non-expert explanation of this, which will not do it justice, instead I commit to write to the Committee with the methodology and ask my colleagues at the Joint Biosecurity Centre, who are expert on this, to set out how that methodology works so that the Committee has sight of it?

Q1858 **Aaron Bell:** That would be helpful. You said, "not weekly", but could it run monthly?



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Baroness Harding: I do not really want to commit to that without consulting experts and colleagues. We published our end-of-October assessment as part of our business plan in December after the JBC's analysis had been peer-reviewed by a number of external academics. This is complex modelling and it is important that different eyes are challenging the assumptions and structures of the calculation. I do not want to commit to a rolling programme of that without engaging with all the experts who have been involved in it.

Q1859 **Aaron Bell:** On contact tracing and the percentage of contacts reached, there was a major jump in the first week of December from 86% to 93%, and it has continued to increase. To what extent was that an artefact of deciding that when you contacted a household you had contacted everyone in that household? Can you give us a little more detail about that?

Baroness Harding: I wonder whether you would like Mr McManus to go through that.

Q1860 **Aaron Bell:** Perhaps Mr McManus can speak to that change in calculation.

Steve McManus: I think that change in performance has been part of a number of changes and interventions that have included a change in the way we contact households. It has also included improvements that we have made in the digital channel around the self-serve element for citizens, and some really important improvements in the overall efficiency of our trace service that I can detail separately or later for the Committee.

In terms of the specific question that you ask, we were responding to some of the feedback that we received from citizens and local authorities. To go back to Baroness Harding's point about the team of teams and the way nationally and locally we work together, feedback around the multiple calls going into households and the need to adapt and change that was a key driver of that change.

The key differences that we made were in two stages. In the first stage we looked for any under-18s within a household. Effectively, they would be informed to the contact tracing service by the index case citizen in that household who had contracted Covid.

That was the first stage. We put that in place in about the third week of November following some quality assurance around how that operated to the latter part of November. We included adults within a household who were contacts of the index case or citizen with Covid.

Both those measures was one aspect of the improvement in performance, but it was really important that that was also in response to what our citizens were telling us about the trace service and local authority feedback.



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Q1861 **Aaron Bell:** One quarter of a household is assumed to take into account everybody within that household. Is that what you are saying? Is that now the position?

Steve McManus: The lead individual informs and so, based on the number of people in that household, both under-18s and adults who are resident in that household are included within that household contact list.

Q1862 **Aaron Bell:** Are there any cases where you depart from that and you might consider it inappropriate if it is a household of multiple occupancy where perhaps not everybody in the household knows each other that well?

Steve McManus: Yes. We have clear scripts around the permanent residency and the relationships of individuals within that household, but it is important to say that that improvement we have seen through that route is part of a number of improvements that have held up in the face of significant increased demand that we have seen coming into the trace service.

Q1863 **Aaron Bell:** Baroness Harding, perhaps you can also answer. Did you go back and work out what difference that would have made to your numbers previously? One of the many things that perhaps undermined public confidence last summer was the low percentage of contacts reached, but, if a lot of it was just that we were not speaking to every under-18 in a household, that could have been avoided a bit earlier. Did you go back and do the work to see what the rates would have been prior to that change?

Baroness Harding: Perhaps I may first provide a bit more context and then describe some of the numbers. As Mr McManus has said, the original public health advice and standard contact tracing practice for other diseases was to contact every individual in a family or household. That was how we set up the service. What became clear as contact tracing scaled through the autumn was that having multiple phone calls to the same household was annoying families, particularly as it then extended to the isolation support calls we also make to people who are isolating.

We gathered a lot of evidence from our local authority colleagues and directly through our contact tracing teams that this was acting as a counterproductive element of our journey and putting people off following the guidance. It was not just an accounting change; it was a genuine change of public health policy.

Q1864 **Aaron Bell:** I think it was a sensible change, but the point is that the accounting looked really bad before and I just want to get an estimate of how bad it was and how big a factor it was.

Baroness Harding: Mr McManus can probably give you that number, but every test and trace system is making different judgments on the accounting. For example, in digital self-serve, which accounts for about a third of our positive index cases, people are sent an email, or a text



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message may provide contacts digitally, and those contacts themselves can confirm that they have received a message digitally. We count a successful digital contact only when the contact has confirmed receipt of the message.

That is the English approach, whereas my understanding of the Scottish system is that once they have sent an SMS message they count that as a successful contact.

As with all statistics, the devil is in the detail. We are looking to improve them continually, but the fundamental change you have seen is in the actual public health contact tracing policy.

Q1865 Aaron Bell: Mr McManus, do you have a number for going back and looking at it, or not?

Steve McManus: That is not something we have focused on because the main focus has been continued improvement in the service. To bring that to life a little bit, it is the speed of response that is the important aspect and then breaking the chain of transmission.

In the first week of January, we completed about 88% of all index cases—citizens with Covid-19. That was about 340,000. Of those individuals, 70% were contacted within 24 hours and 93% in 48 hours. Importantly, as for the contacts who are supported to isolate, 92%, or about 683,000, were identified, and over 97% of those contacts were within 24 hours, and 99% were within 48 hours. It is the volume and speed we are working out at the moment.

Aaron Bell: I have a few more questions about variants, but I understand my colleague Dawn Butler wants to come in. With the Chair's permission, I will let her come in at this point.

Q1866 Dawn Butler: I seek points of clarity around the change in how you collect the data. I understand that if you contact a household and there are under-18s in it you may include them in your data capture, but are you saying that when you call a household you then include every single adult in that household now as being contacted?

Steve McManus: Individuals need to agree to this for adults. We tested that initially for under-18s and then extended it to permanent residents of households where those individuals agreed to that taking place.

Q1867 Dawn Butler: That is a yes?

Steve McManus: Yes.

Q1868 Dawn Butler: How reliable do you think it is to contact one adult in the household and that adult then relays all that information to all the other adults in the household?

Steve McManus: The important thing is that this is responding very much to the feedback we have been getting from households about



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multiple calls. We believe that it is reliable in relation to what we are seeing coming through in terms of the coverage we have. It is also something we continue to monitor, but we do believe it is reliable.

Baroness Harding: It might be worth explaining that this is not just a quick conversation where the index case in the household says, "Sure, I'll tell all the household." They have to take responsibility. We ask whether they are willing to take responsibility and the call goes through the details of who the members of the household are and their relationship with them. It is a very rigorous scripted discussion, as Mr McManus describes.

This is a trade-off because the very strong feedback from families was that the alternative approach was actively leading to people not answering the phone and ignoring the calls.

Q1869 **Dawn Butler:** If the national Serco system is overlapping with the local system, does that not tell us that the local system could have worked on its own?

Steve McManus: It is important to break that down a little bit. We work hand in hand with our local colleagues. That team of teams is really important in the way local expertise works with the national scale. Nine out of 10 citizens are contacted through the national route. That is a breakdown between the digital journey and the national contact centre team, a significant proportion of which are made up of clinical contact tracers, which is important to recognise. There is then a proportion of harder-to-reach citizens where our local teams and health protection teams come into their own.

It is about the team of teams: local teams with the scale and capability of the national resources working together. That is what is happening every day. I talk to local directors of public health and health protection team colleagues. They see that kind of improvement we have been able to make in the national service and how it is supporting them locally.

Q1870 **Aaron Bell:** Baroness Harding, I want to talk about the new variants, first the Kent strain. Given that it is more infectious, what are the implications for Test and Trace? Have you introduced any new measures or protocols in response to the UK variant?

Baroness Harding: As you say, the new variant, which is now endemic and accounts for more than 70% of cases across the country, has broad implications not just for NHS Test and Trace but the whole country's and world's fight against Covid. It means that we all have to keep our distance more rigorously with more hand washing and wearing of face masks; it also means that speeding up our end-to-end test and trace journey becomes more imperative and, as I think I said earlier, finding more of the positive cases.

In December we published our business plan, which set out our priorities for the next few months. That is very much shaped by our big second priority to increase the reach and speed of test and trace, which is what



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we are doing. Therefore, it is increasing the proportion of people who have the disease and coming into our system and speeding up the end-to-end process, which is what you are seeing being delivered week in, week out.

Q1871 Aaron Bell: Talking about the other new variants, in particular the South African and Brazilian ones, the Secretary of State for Health and Social Care said that we now have enhanced contact tracing to stop these from spreading. What does “enhanced contact tracing” mean, and could you provide some information on the urgent testing that is going on for the South African variant?

Baroness Harding: I will give you the headlines and then hand over to Mr McManus, who is leading that work for us, so he can give a bit more detail.

We need increasingly to think of the end-to-end journey to include genomic sequencing as well as finishing at isolation. It is because of the scale of genomic sequencing capability that we have through Test and Trace and PHE that we have been able to identify a number of these new variants. I do not think it is a coincidence that we are at the leading edge of identifying variants; it is because we have that scale end-to-end test and trace, isolation and also genomic sequencing to understand the consequences of it. That is shaping a lot of our response.

As for the South African variant and the 484 mutation of the UK variant found at Bristol and Liverpool, we are looking to surge-test in those geographies to achieve even greater reach and faster turnaround to identify how much community spread there is of these potentially dangerous new variants and break those chains of transmission as fast as we possibly can.

I wonder whether Mr McManus can give you a bit more detail on exactly how we have been supporting those local authorities over the past few days.

Steve McManus: Would you like me to explain very briefly the enhanced contact tracing?

Q1872 Aaron Bell: Yes, please. Is there backwards tracing as part of that as well? That was to be my follow-up, so perhaps you would roll those together.

Steve McManus: Conventional contact tracing is very much the forward-look aspect, focusing on the infectious period of the individual to identify close contacts and potential transmission settings looking forward. Enhanced contact tracing or, as you alluded to, backward contact tracing, focuses retrospectively over a period of seven days looking back before the individual became infectious to identify the likely source of the case of infection. This is where we start to get into some of the more forensic work to try to track down that original source and be able to extend the



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range of our contacts, encouragement for testing and ultimately isolation. It is a really important part of our tracing armoury.

In relation to the areas we have identified for the new variants, we are doing some work to increase the speed of sequencing under Mr Hewlett's team and looking to further shorten the turnaround time for sequencing.

We are surging additional testing capacity—the mobile testing units, but also the testing kits that can be delivered door to door. We are effectively saturating a geographical area to be able to increase the level of tests but, importantly, to increase the level of sequencing and understand potential community transmission.

Finally, we have set up a dedicated variant of concern contact tracing cell nationally so we can fast-track even further the tracing element and work directly with local health protection teams and local authority teams to support more rapid isolation for the citizen.

Q1873 Aaron Bell: That is very clear. My understanding is that the E484K mutation in the South African variant has arisen independently in some UK strains. The most concerning aspect of these variants is that it changes the shape of the spike protein and possibly makes vaccines less efficacious, though they still seem to be efficacious against it.

How quickly can we identify whether cases anywhere are part of E484K? You mentioned what you are doing with the National Virology Consortium and on genomic sequencing. How quickly can we turn around both these individual hotspots but more generally find out whether the variants are spreading and emerging separately?

Baroness Harding: It is precisely because of our backward contact tracing that we have been able to pinpoint where to surge our testing. We are surge-testing in the nine different locations where the South African variant has been found and our backwards or enhanced contact tracing has been unable to identify an international link. That is precisely because that process has highlighted the risk of community transmission.

As we speak today, genomic sequencing takes circa eight days. As Mr McManus said, we are looking to work collaboratively across the end-to-end chain to reduce that considerably. I would like to be able to halve it over the course of the next few weeks. We are already world class in this. That is going considerably further than anyone in the world is contemplating.

What I am describing is that this is not a process like a 30-minute lateral flow test; it is a very complex piece of science. We are doing a number of things that can speed up the end-to-end process flow, some of which are relatively low tech—for example, colour coding test kits in the particular locations so it is possible to pick them faster when they arrive in our laboratories and flow through the laboratories as a fast-track channel. We are already the best at this, but we will be the fastest in the world by some margin.



Q1874 **Aaron Bell:** On the actual tests themselves, one of the reasons we picked up the UK variant was that the PCR test was looking for one of the bits that was not there on the UK variant. Are we looking at redesigning the test to look for E484K going forward? Is that your area, or is that a scientific decision that you will implement if they make that decision?

Baroness Harding: We have a team of brilliant scientists, clinicians and industrial innovators who have been working on new testing technology for the past nine months. It is that team which has brought you lateral flow testing and brought into operation things like the Oxford Nanopore LamPORE test.

That team is also looking at how you can adapt both the existing PCR technology and new testing technologies. That is going to be part of our skillset. The National Institute for Health Protection will need to maintain on an ongoing basis the ability to work collaboratively with the diagnostics industry continually to innovate testing.

Q1875 **Aaron Bell:** Going back to the overall picture, recently there has been significant spare capacity on the testing side. In the future do you anticipate things getting quicker as cases decrease and your workload falls? Secondly, what are your plans for the spare capacity we currently have?

Baroness Harding: We have been very clear all along that it is important to run with some spare capacity. These laboratories now work 24/7. They worked all the way through the Christmas and new year holidays and we need to make sure that the labs have some slack; otherwise, they are not able to deliver the turnaround times, so there is a constant balance.

We have also demonstrated that having that surge capacity is really important when things change with the virus. We were able to stand up testing at the border for hauliers over the Christmas period at no notice. We are currently surge-testing because of the new variant. It will be important to maintain that ability both to surge-test and have sufficient flow through the laboratories so they are able to deliver ever-improving turnaround times.

That said, as you rightly say, we will, God willing, see infection rates come down. It will be important for us to work thoughtfully and carefully across our overall diagnostics industry, including all the NHS and PHE laboratories, in making sure that as we come out of this crisis we have the infrastructure. We have built the largest diagnostic industry that the UK has ever seen and we need to make sure that we take the very best of that as we will scale down over time.

Aaron Bell: Thank you very much, and thank you to everyone working under you on test and trace.

Q1876 **Chair:** On Aaron's question about spare capacity, it is great that we have it and, for reasons of resilience, it is clearly important that that continues,



but I think that over a third of PCR capacity is spare. Have you contemplated making that PCR capacity available, say, for people working in the care sector to have regular PCR tests rather than lateral flow tests?

Baroness Harding: The people working in adult social care make up one of our largest users of PCR capacity today. Since the summer everyone working in adult social care has been able to have a PCR test once a week. We have now extended that to domiciliary care. That is exactly right. We are using some of that capacity in high-risk settings in addition to regular lateral flow testing.

Q1877 **Chair:** Will you expand the number of professions or applications of that since you have the capacity now to be able to do it?

Baroness Harding: We are very much driven by the clinical advice on what the best protocols would be. As you rightly pointed out, the turnaround times for PCR testing will always be slower than for lateral flow testing. I would expect us to use a combination depending on settings and ease of use.

Q1878 **Jeremy Hunt:** Baroness Harding, good morning. Steve, it is good to see you in a different incarnation from your Royal Berks days when we worked together in my previous incarnation.

Baroness Harding, looking at the data it is very clear that on the end-to-end issue Test and Trace is doing a lot better than it was the last time we talked in a Committee setting. I think it would be remiss of me not to acknowledge that, but in an end-to-end process you said the main purpose was to break the chain of transmission. That means not just contacting people we want to isolate but going ahead and isolating.

You said last week that 40% of the people you asked to self-isolate were not fully self-isolating. Could you tell us how many people that equates to every day who are being asked to self-isolate but are not doing so?

Baroness Harding: First, thank you very much, Mr Hunt, for your recognition of the improvements we have made. I appreciate it, as will all the team working in Test and Trace.

To directly answer your question, we have to be careful. The evidence we have is based on surveys. We live in a country where we do not track people's every movement and, therefore, the evidence on compliance with isolation is based on people's self-reported surveys. As you say, two weeks ago I quoted the internal test and trace research that suggests just under 60% of people tell us they fully complied with the instruction to self-isolate. A more recent study from UCL reports that 80% of people said they had not come into contact with anybody during their isolation. There are a number of different data points, so I am a bit nervous. We could take 50% or 80% of the 750,000 people last week.

Q1879 **Jeremy Hunt:** Let us take the better of those two numbers as you quoted it—20% have been in contact with other people. How many people is that every day? From the latest figures you have, how many



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would that equate to, for example, on one day last week?

Baroness Harding: If I do it on a weekly basis, remember these numbers are moving a lot because the number of contacts are coming down.

Q1880 **Jeremy Hunt:** I understand. Just take a day last week. I have my calculator here, so I will divide by seven whatever number you give me.

Baroness Harding: Let us take last week's total number of cases and contacts at circa 700,000 people. Therefore, that would be circa 100,000 people a day and circa 20,000 people a day would not be coming into contact.

Q1881 **Jeremy Hunt:** Circa 20,000 people a day are not isolating in the way we need them to.

Baroness Harding: I put a lot of caveats on that.

Q1882 **Jeremy Hunt:** I understand that.

Baroness Harding: I understand the desire to get to a simple number, but I think we have to be careful.

Q1883 **Jeremy Hunt:** I completely understand I also understand that this is not entirely your responsibility; it is the whole of Government seeking to get this right. It will not be exactly 20,000; it could be 15,000 or 25,000. It is a huge number of people every single day who could be passing on the virus and are not isolating in the way we need them to. Why do you think that is? What do you think is the main reason why thousands of people are not isolating every day in the way we critically need them to?

Baroness Harding: Could I add a slight complexity to your calculation, which will make your number go up a bit? That is the proportion we know about. My biggest concern about people not isolating is not the 20%, say, of people who are not following that instruction; it is the people who feel ill but do not come forward for testing.

Q1884 **Jeremy Hunt:** I understand that. As I say, this is not entirely your responsibility, but the people we know about are the people we can do something about. Every day 20,000, plus or minus, are not self-isolating. Why do you think that is?

Baroness Harding: I promise I will answer the question. I also want to say that we can do something about people not coming forward for tests.

Q1885 **Jeremy Hunt:** I understand, but let us go back to what we can do with the ones who are not doing what we are asking them to do. What is the reason they are not doing it?

Baroness Harding: I think the why is the same for both groups, which is why you should look at the two together. It probably falls into four different categories. The first is lack of understanding and not being clear what they should or should not do, so it is about communication.



Q1886 **Jeremy Hunt:** You can sort that out through your teams because that is just being very clear about what they are required to do. You have contact with them.

Baroness Harding: We can do that together across local and national Government test and trace. The clearer and simpler the guidance, the easier it is for people to follow it. That is the first thing.

Q1887 **Jeremy Hunt:** No. 2?

Baroness Harding: No. 2 is, "I don't know how to. This is practically impossible; I do not have enough food in the fridge," or, "I have to get a prescription," or, "I have some caring responsibilities that mean I have to go outside."

Q1888 **Jeremy Hunt:** What is the solution to that one, Dido?

Baroness Harding: Across the country, local authorities have been doing some fantastic work in providing practical support either directly or through voluntary groups and other third-sector providers.

Q1889 **Jeremy Hunt:** That is a local authority lead. No. 3? I am sorry to rush you, but we have so much to do.

Baroness Harding: No. 3 is financial support; that is, "I can't afford to; I have to go out and work."

Q1890 **Jeremy Hunt:** Should we not be saying, "We will just make up your salary if you have any reduction in income as a result of being asked to self-isolate. For a public health reason the state will make up the difference"? Is that not an obvious thing to do?

Baroness Harding: As you say, this is a policy area that is not directly in the control of NHS Test and Trace; this is an overall Government and Treasury responsibility.

Q1891 **Jeremy Hunt:** But that would help, would it not?

Baroness Harding: You have to think very carefully about all of these once you put financial incentives in place, as you will know better than I, to make sure it genuinely drives the right behaviour rather than any unforeseen consequences. I think it is a bit more complex than you are suggesting.

Q1892 **Jeremy Hunt:** We have the wrong behaviour now. On your own numbers thousands of people every day are not isolating.

Baroness Harding: But 80% of people are.

Q1893 **Jeremy Hunt:** But in the end thousands of people every day is enough to restart the pandemic. Anyway, let us have your fourth reason.

Baroness Harding: Let us remember that there is financial support. People already in receipt of benefits are able to claim £500 to self-isolate, so I am not disagreeing with you about the forms of financial support.



Q1894 **Jeremy Hunt:** What is reason No. 4?

Baroness Harding: The fourth area is mental health. We have talked about the physical practicalities. The mental piece is really difficult. There is work that communities are doing. Local authorities are doing brilliant work here, but there is undoubtedly more we can do to help people cope with the mental challenges of self-isolation.

Q1895 **Jeremy Hunt:** My final question follows up what Aaron Bell was asking about with respect to enhanced contact tracing. Backwards contact tracing and genomic sequencing sound brilliant. If you got infection levels low enough, would it be your ambition that we do enhanced contact tracing, given that the new variants are on the rise and we are worried about them, for every single case that comes into the test and trace system?

Baroness Harding: Yes, very much so. We already do gather the data on the contacts you may have had over the previous five days in order to spot patterns. Mr McManus has been leading some work with local directors of public health in the south-west to improve and automate some of the data feeds and tools for that enhanced contact tracing. I believe this Committee took evidence last week from two directors of public health describing the fact they already do this.

Q1896 **Jeremy Hunt:** Practically, what level of daily new infections would we have to get down to before it would be feasible to do enhanced contact tracing for every new case?

Baroness Harding: We do enhanced contact tracing; it is about the ability properly to complete enhanced contact tracing to have the confidence to know where every single case was originally infected. We are doing enhanced contact tracing with every case today, but because you have such a high level of infection in the community, even with the data, it is hard to pinpoint where people became infected.

You ask the right question. I do not have a magic number for you on the level, but you are right. The lower the infection rates as we come out of lockdown, the easier it is for our brilliant team of teams of contact tracers to chart the path back and work out where people must have been infected.

Under the Japanese system, which is a role model for this, the local health protection teams' KPIs enable them to say confidently that they know where every single case caught the disease.

We have to get to much lower levels of infection than the ones we have today to be able to say that confidently, simply because of the number of different infection paths an individual would have crossed, when we have infection levels as high as they are today.

Jeremy Hunt: Thank you to you and everyone in your team.



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Q1897 **Chair:** On the point about contacts, Mr McManus, for everyone who tests positive how many contacts do you identify on average?

Steve McManus: At scale we would be able to identify between 10 to 20 contacts. In the early days we were identifying significantly fewer than that but, if you look at our ratio, we are identifying in the order of under 10 contacts for each individual index case.

Baroness Harding: It differs quite substantially for more complex settings. An index case in a care home, hospital or closed community like a prison versus regular household contacts would be more like two or three compared with eight to 10 for more complex settings.

Q1898 **Chair:** On the figures for Test and Trace in the week between 14 and 20 January, about 275,000 people tested positive and 470,000 people were identified as close contacts. That suggests that there are about two people for every person testing positive. Is that right?

Baroness Harding: From last week, yes. This moves a lot. Remember that now we are in lockdown we see far fewer non-household contacts, and we would expect as the economy opens up to see more of those contacts.

Q1899 **Chair:** Perhaps my next question is for Mr McManus. Do you think it is right that people testing positive genuinely have just two contacts, or do you think you are missing a whole lot?

Steve McManus: That is very difficult for me to answer specifically. Our frontline contact tracing staff use very in-depth conversations with those individuals who have tested positive to try to ascertain the full range of contacts. We also look to follow that through from the national team with the local team if we feel that further local follow-up is required.

I am confident that in terms of the expertise of our frontline staff both nationally and locally they are absolutely trying to work with those individuals who have tested positive to get the full extent of contacts as best they can, but clearly we are reliant on the citizen to give us that information in full.

Q1900 **Chair:** The average for the local teams that week is nine contacts per positive case and two for the national team, which suggests there is a population of people who are not being detected.

Baroness Harding: That is not quite right; this is a different definition of local versus national. The health protection teams in Public Health England are the group you are referring to where contacts are higher. They are the ones who are contact tracing more complex settings, so that was the nine to 10 to which I was referring.

To add to Mr McManus's answer, this is where you see the interplay between test and trace and hands, face and space. Remember that a contact is somebody who has been within 2 metres of you for more than 15 minutes. I think that people have changed their behaviour



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substantially since this time last year. It is very hard to give you a definitive answer to your question, but I would observe that people think very carefully about spending long periods of time less than 2 metres away from people outside their households.

Q1901 Chair: I understand that. Coming back to the point about breaking the chain of transmission, we really need to know whether two per positive test is, as you have just implied, a fair reflection given social distancing and what people are experiencing, or whether we are missing a lot and, if we are, we need to find ways to discover who they are.

Baroness Harding: The other data point that we have to help us with this is the Covid-19 app. That app would suggest that we are not a long way off in terms of people declaring their contacts. Obviously, that is a select sample, but it is none the less a piece of corroborating evidence.

Chair: Dawn Butler will have some questions on the app a little later.

Q1902 Graham Stringer: Can you talk us through how you came to the decision to use a centralised model for test and trace rather than a decentralised one?

Baroness Harding: Would you like me to talk to both testing and tracing or just one of them?

Q1903 Graham Stringer: I think the focus of my question is on tracing, but both would be interesting.

Baroness Harding: To start with testing very briefly, this time last year the UK had the capability to do about 2,000 PCR tests a day. As we stand today, we have the capability to do over 800,000 tests. The means of scaling that up has been a genuine national effort across the NHS, which has dramatically increased its testing capacity through pillar 1, but also through a variety of different laboratories in the private sector, third sector and university sector.

Rather than it being a national or local choice on testing, it has been a choice to grow testing capacity in all those areas. I do not think it is possible for that to have been done on a decentralised basis with individual NHS STPs or local authorities building laboratories on their own. We needed to build very large-scale laboratories and network them together with the 100-plus NHS laboratories. That is the testing answer.

I appreciate that you are more interested in tracing. The decision to launch the tracing service predates me. It had been made in mid to early April and I was appointed in the first week of May. The logic for it has been, I hope, well documented. In order to stand up a tracing service of the scale needed in that first wave, the decision was taken that practically you had to build a national integrated system. I think that was entirely the right thing to do at the time.



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When I joined in May one of my first appointments was Tom Riordan, chief executive of Leeds City Council, to join my leadership team and help us to build a connected local and national contact tracing and local containment approach.

I think it is a mistake to characterise what we are doing as national or local; it is very definitely both. We have tripled the size of the Public Health England local health protection teams over the course of the past nine months. We have also provided substantial funding—over £900 million—to local authorities as part of their contain outbreak management fund. We now have 305 local contact tracing partnerships working directly with local authorities. Mr McManus can talk to this in more detail.

Therefore, it is not either a national or local system; it is genuinely both. As you can see from the performance, the combination of local and national and digital and human is hitting its targets.

Q1904 Graham Stringer: I have one question on the testing and then I will move completely on to tracing. When the decision was made to set up a centralised testing system for capacity and the lighthouse laboratories were funded—and this is a well-worn path—there were a lot of small, private and public laboratories that were offering capacity at that time. Do you now think it was a mistake not to use that capacity as a stepping-stone to the major increase in capacity in the national laboratories?

Baroness Harding: No. I think that using both has been the right route. If you look at the timeline that you suggest, scaling up very rapidly to 2,000 tests a day from the first target of 1,000 tests a day, which was before I joined, the only practical way to add that sort of increment of growth is to build large-scale laboratories.

If you look at the scaling of our testing programme across this country, it is a huge success story. We do more tests per head of population than any other major western country. We have a very large-scale, high-performing system. If we had gone, to begin with, with smaller units incrementally growing, we would have very quickly discovered that it was impossible to reach the size of the testing network that we needed to build through the summer and the autumn.

Q1905 Graham Stringer: The point I was making, which you have not really answered, was that, as the capacity was being increased centrally, would it not have been useful in the short term to use the capacity that was being offered? There was a lot of evidence that laboratories offered their capacity at that time and they didn't even receive a reply. I think that was a mistake. I would just like you to say yes or no, it was not a mistake.

Baroness Harding: It is hard for me to comment on the detail, Mr Stringer, as I was not there at the time. Standing back from it, the decision to invest in the lighthouse laboratories and build a national



integrated testing programme across all four nations has been one of the success stories of the crisis.

Q1906 Graham Stringer: Internationally, testing capacity is often done at a national level. The international comparisons with tracing are often done locally. While you have new teams set up by Public Health England, we get a very different story when I talk to them locally in Greater Manchester or when the Committees talk to them. We get a different story from directors of public health about the co-operation.

To go back to the very beginning, we were told last week, I think it was, that, when the systems were set up, the local public health directors were not consulted on them being set up. I can give you quotes that the centre still seems remote. Can you justify the decision to set up your own local teams and not to use the local teams? Public health has always been a local function in this country.

Baroness Harding: As I said, none of the three of us on this panel was present at the time, but let me give you my view. This time last year, contact tracing as a function was done entirely locally by the Public Health England local health protection teams. It was not done by local authorities. It was done by PHE and their local regional teams. When I refer to having tripled the size, those are the teams that we have tripled in size.

We have also gone much more local in working directly with local directors of public health in the local contact tracing partnerships. That was not the infrastructure that existed as we went into the crisis. I do think—and this is where we may well agree, Mr Stringer—that, as we come out of the crisis, one of the things we have seen really clearly both in NHS Test and Trace and, I would argue, in our overall health system is that much closer collaboration between national institutions and local government is the secret to success.

Looking forward, I would very much expect that the local contact tracing partnerships that we have formed over the course of the last six months will be one of the enduring elements of our response to future pandemics. Another enduring element of that will be a single national data system that all of them are using. I point to countries in the world that had an entirely local system—Germany would be an example—that have had to try to cajole local systems to roll out a common data platform because they have not been able to collate national data on contact tracing and share learnings as a result. I really think the right answer is in the combination rather than in the either/or.

Q1907 Graham Stringer: We asked the directors of public health how much extra cash they had had to help, and we could not get a satisfactory answer to that question. As NHS Test and Trace, have you transferred money directly to local authorities for tracing, and, if so, how much?

Baroness Harding: I will give you the headline numbers and then Mr McManus may want to give a bit more detail. The funding that I referred



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to earlier—the £975 million-worth of grants—has come through the contain outbreak management fund. Initially £400 million was made available in May, and then it was expanded to £975 million by the end of the year.

As we move into 2021, we will be delivering further grants to support local authorities to continue. This is not only for contact tracing, and I believe the directors of public health said the same to you last week. This is for the overall coronavirus response. The additional funding going forward is potentially worth over £225 million a month.

Q1908 Graham Stringer: That was part of the frustration, because some of the money going to local authorities is being given to them to support businesses, individuals, and for special measures. What I am trying to get at is the money that has gone into local environmental health departments actually for tracing. Does that figure exist?

Baroness Harding: In all the discussions I have with the Local Government Association and various chief execs, and with the Association of Directors of Public Health, they all point to the fact that it is a mistake to think of tracing as a distinct activity apart from the broader support that they provide.

Mr Hunt asked me about isolation support. The most effective way to think about this is as an integrated local authority team. It is why local authorities are best placed to do this. If you have vulnerable young people who need to be contact traced, you want to make sure that they are getting all the right support, and it is probably better that a youth worker reaches out to them rather than somebody from a straightforward contact tracing team. We see local authorities adapting the funding to fit their specific needs.

Q1909 Graham Stringer: I accept that there is a large spectrum of needs to deal with Covid. It would be useful to know how much had gone into actually tracing, because it is a distinct activity that needs support from elsewhere.

My final question goes back to the question that Greg asked at the very beginning about the business case for setting up the system as it was set up. Has that business case been published?

Baroness Harding: That is a very good question. I am afraid I do not know the answer to that. I will have to double-check; I am sorry.

Q1910 Graham Stringer: If you could let the Committee know, that would be helpful.

Baroness Harding: Yes, of course.

Q1911 Graham Stringer: If you have not published it, the obvious request is, will you publish it?



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Baroness Harding: Yes, of course. Let me pick that up outside of the meeting and come back to you.

Graham Stringer: Thank you.

Q1912 **Dawn Butler:** Before I get to the app, I want to pick up on some of the points that Mr Stringer just asked. Baroness Harding, first of all, thank you. This is still an interim role that you are doing, and you are not paid for it, are you?

Baroness Harding: Correct.

Q1913 **Dawn Butler:** I think the public do not know that. It is important that we say that and put that on record.

You touched on local authorities and having a bespoke service. Serco Test and Trace works from a set script, but local tracing services work in a more bespoke way. It will talk to people in regard to not just isolating but if they have any other concerns, healthcare needs, whether they need food or support for financial services. Is that not a more effective way to encourage people to stay at home and to do tracing?

Baroness Harding: I think we need both. If I may, I will hand over to Mr McManus in a second to talk in a bit more detail about how our NHS Professionals as well as Serco and Sitel remote-based contact tracers work. We have to recognise the sheer scale. Over our peak week in the new year, we successfully contacted and asked to isolate over a million people. Practically, that brilliant, tailored local contact tracing support that you described would not have been possible to have reached a million people in that way—not least as quite a lot of people are willing to self-serve digitally, and that is the most effective way for them to get the information they need. It is hugely important to have that local tailored response, but only relying on it would not enable us to break the chains of transmission in the peak of a pandemic.

Q1914 **Dawn Butler:** When a Serco trace is conducted, do you know what telephone number shows up on the person's phone?

Baroness Harding: I will hand over to Mr McManus, but it is a national number. We have been trialling local numbers with a couple of local authorities to see if that improves the connection rate.

Steve McManus: It is really important to understand the interplay between the local teams but also the really important clinical contact tracers that we have within NHS Professionals as well. After the digital journey, it is the clinical contact tracers nationally who will be—

Q1915 **Dawn Butler:** I am sorry; I just asked what number shows up on a person's phone with Serco's—

Steve McManus: Apologies. There is a national number. We are trialling in a number of areas—we have done that in the north-west and a number of regional areas—to see whether or not there is improved uptake by using a local number, and we will be evaluating that.



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Q1916 **Dawn Butler:** I think it has been found that there is an improved uptake if somebody sees a local number on their phone rather than a withheld number or a national number. My other quick question is that, if Serco does not get through to somebody, is there a call-back service?

Steve McManus: There is a number of times that we will try to contact through either NHS Professionals or through the Serco-Sitel national team. If we are not able after a number of call-backs to get hold of an individual, we then pass that to our local teams to follow that up. That may well also involve going round to the individual's home to directly contact them that way.

Q1917 **Dawn Butler:** There is not an automatic call-back for the Serco-Sitel tracing. Is it a regret that the local tracing was dismissed out of hand at the very beginning of this pandemic?

Baroness Harding: No, I really do not think so. As I said earlier, viewing this as a trade-off, an either/or local or national, I can see how it is tempting to get into that debate, but it is a mistake. The right way to do this is to put all the resources of the nation on to the problem. Right the way back in April, before any of us arrived, it would not have been possible to stand up a scaled tracing service entirely locally at that point. We have had to build it in parallel, local and national.

Q1918 **Dawn Butler:** Baroness Harding, if the investment that was put into Serco and Sitel was put into local authorities, we may well have been able to stand up the service. Can I just say—

Baroness Harding: Actually, more money has gone to local authorities than to Serco and Sitel in the last nine months.

Q1919 **Dawn Butler:** Some £192 million was provided to Serco to provide 18,500 call handlers. How much have you budgeted for in this financial year to pay Serco?

Baroness Harding: The new financial year starting from April as opposed to now? We are currently working through. Remember that one of the biggest challenges in the service that I run is trying to predict the path of the virus. Working through what the modelling assumptions should be as we come out of lockdown is something that we are currently working on.

Q1920 **Dawn Butler:** I am not quite sure I got an answer to that. Can I just move on—

Baroness Harding: It means that until we have a firm view of the scale of contact tracing necessary, it is hard to give you an answer of how much we would expect to spend on contact tracing in the year ahead.

Q1921 **Dawn Butler:** Okay, thank you. On the app, Mr McManus, the National Audit Office reported that by October £43 million was spent on the app, and that was almost twice its allocated budget of £26 million. Do you think that has been value for money in any way?



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Steve McManus: I think the app has played a really important part in terms of our overall service to the citizen. We have over 20 million citizens registered with the app, which was one of the fastest-growing apps within the world. It is a really important part of the first part of the journey for our citizens. It opens up the channels that we have available for citizens to be able to engage with Test and Trace.

We have seen that engagement increase. Around 35% to 40% of our initial contacts come through the app. That digital journey will be something that we should further build on. I will not comment on the value for money, but I will comment on the fact that the app has been a really important part in our overall service.

Q1922 **Dawn Butler:** We knew there were always going to be problems in trying to build a bespoke app. Having previously been a programmer, I couldn't understand why the Government were even going down that route and wasting £40 million. To what extent has the expenditure on this app resulted in more people being contacted? I say this in the context of Northern Ireland: their app cost £1 million, and seems to be really effective.

Baroness Harding: Could I maybe pick up a bit of that as the app, to be fair to Mr McManus, does not sit under his team? I would make a couple of points. First, I do not think the £40 million invested in the initial app was wasted. It is because of the work that we did with it that we were able to develop, together with Google and Apple, a much more effective algorithm. Google and Apple have both recognised that.

Q1923 **Dawn Butler:** We were not the first to be dealing with the pandemic. Google and Apple were dealing with countries all over the world in regard to apps. They said that they would not support a centralised app from the very beginning. You do not have to go over older ground.

Baroness Harding: Yes, maybe we should look forward. For the record, Google and Apple did not start working on their API until after we had started our own work. They are on the record saying that the UK app that combines both contact tracing and our venue checking is a world first. Our app functionality is different from others of the four nations, except for Wales as it is a joint app with Wales. It has been by far the most effective at take-up worldwide. We were the second largest downloaded free app in England after Zoom last year, ahead of apps such as TikTok. So I just wanted to put that straight.

Q1924 **Dawn Butler:** You indicated to the Public Accounts Committee last month that you planned to integrate the data from the app into the NHS Test and Trace's workflow. Given that the app now works in a decentralised manner, what data will you collect from the app?

Baroness Harding: A couple of things. We have integrated the app into the testing journey and the isolation support payment journey now. If you want to order a test via the app, at that point, you give us your



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personal details in exactly the same way that you would if you were ordering a test through any other channel.

If you are then alerted by the app as having been a close contact of somebody, if you want to apply for the £500 isolation support payment, again you have to proactively choose to apply for it and, in doing so, give us your details. The app is anonymous unless you choose to offer your data either to be tested or to receive a financial support payment. So you as an individual remain anonymous unless you choose to do that.

Q1925 Dawn Butler: That is an important clarification; thank you. You also indicated that the analysis of the app's usage would be published soon. Can you tell us when that will be, please?

Baroness Harding: I am very much hoping to be able to publish that within the next week or so.

Q1926 Dawn Butler: Do you have any fear now that, because people know that once they input their data into the app it is going to be used on different platforms, people will then not use the app?

Baroness Harding: To date, no, we have not seen that. We have seen downloads continue to grow gently; now 21 million people have downloaded it across the country. We see good engagement with the app precisely because you are only giving us that data if you want to order a test or you want to get a financial support payment. We share this view, Ms Butler, about the concern of how important it is that people know that their data is protected and that it is anonymous unless they choose. So far, we have seen very successful uptake and adoption rather than concerns.

Q1927 Dawn Butler: Have the data protection rights within the small print that people would read all been changed? How many programme changes have happened to the app since last year?

Baroness Harding: As you will know from your background, we are continually updating and improving the app, and every time any changes are made that affect our data protection disclosures, those are then updated in the "my data" section of the app. We work very closely with the Information Commissioner and their team to make sure that we are compliant with all of the disclosure requirements.

Q1928 Dawn Butler: I have a quick couple of questions on consultants within your Department. How many consultants currently work in Test and Trace?

Baroness Harding: Circa 2,500.

Q1929 Dawn Butler: What areas are they working in specifically?

Baroness Harding: In a number of different areas. Again, if I could give a little bit of context, we have stood up a very, very large £22 billion service in the course of nine months. Many of the roles in Test and Trace



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are not permanent ones. They are roles that we would hope, as the infection rates decline, will not all be needed.

It is not appropriate to fill all of the roles in the organisation with long-term permanent hires, because to do a permanent recruitment process you cannot stand something up in a few weeks and the long-term costs will be greater. It is probably a rather long-winded description of why it is important, but it is a good thing to have contingent resources on a project of this nature.

Q1930 Dawn Butler: I understand, but what do they do?

Baroness Harding: A variety of different things. They have been building a number of our systems and processes. We have people from consultancy organisations with expertise in digital design and technology who have been working in our technology teams. We have people with expertise in operational systems and process design who have been building the testing workflows in the testing system. We have people who have been building and designing the tracing systems that we have rolled out.

A lot of it is quite technical, operational process and systems design as we build the services. As we mature our organisation and stabilise, we are looking to transition a number of those consultancy roles. As we have built something, we do not need people with building expertise. We need permanent civil servants to run those systems as they have been built.

Mr Hewlett may like to talk a bit about that, because a lot of those resources have sat in the testing team as we have scaled up the testing organisation.

Mark Hewlett: As an example of what the consultancy team has achieved for us at such short notice, the digital platform that Baroness Harding referred to has had 1.5 billion views since September 2020. We take more orders every day than most national retailers. That build function was set up in extraordinarily rapid fashion. Now that that is set up, as Baroness Harding intimated, we will move towards a very stable, civil service-based workforce that can continue to run that operation now that it is established.

Over the course of the next three months, we will be transitioning more consultants off the programme—circa 200 in my particular part of the organisation—and replacing them with civil servants as the function becomes much more stable.

Q1931 Dawn Butler: How much are these consultants paid at the moment, on average?

Baroness Harding: David Williams, the Second Permanent Secretary, gave detailed answers at the Public Accounts Committee last week. I think the average is 1.1 thousand per day.



Q1932 **Dawn Butler:** So 1.1 thousand a day; that is quite a lot. When you transfer over to a civil servant, how much do you think that would drop by, on average?

Baroness Harding: It will depend entirely on whether you are swapping out like for like or, as Mr Hewlett has described, you no longer need the deep technical expertise to build the function and, instead, the function itself collapses into a more run, operational mode. So I don't think we can get into a like-for-like comparison. It won't work like that.

Q1933 **Dawn Butler:** The NAO report spoke about how it is yet to identify the extra £7 billion that you have asked for. What struck me when I read the NAO report is that we talk about billions of pounds as though it is a tenner. Do you know what I mean? If I was to pay somebody £1,000 a day, it would take 2,739 years to pay them £1 billion. We are talking about a lot of money. There is £7 billion that is not currently being accounted for. What will that be spent on?

Baroness Harding: The vast majority of the costs in Test and Trace go into testing and are variable based on the number of tests that we have both the capacity to do each day and the number that we conduct. The forward forecasts of our budget to the year ended includes an assumption of delivering over 800,000 testing capacity, as we have done.

When the NAO looked at our plans, we had not done that yet. With regard to the assumption on the volume of tests, the amount of test kits that are used, the amount of trucks and vans that cross the country, a lot of it is very variable cost based on the volume of tests that we conduct.

I would add that you are absolutely right that this is a very large amount of money and we do take it extremely seriously that we are accountable as public servants to deliver value for money. We are very focused that our primary objective, as we said, is to break the chains of transmission and in doing so create value for us as a society. But we treat very seriously the substantial sums of money that we are entrusted with to make that happen.

Q1934 **Dawn Butler:** It is a lot of money. I have one last question, and I hope you do not think this is an unfair question. How many people do you know who have been awarded a Covid contract, as it is termed, from the beginning of this pandemic?

Baroness Harding: Just so that I understand, what do you mean by "know"?

Q1935 **Dawn Butler:** I mean associated with, work with, family friend, went to university with—any connections.

Baroness Harding: As far as I am aware, there are no conflicts of interest that I have with anyone who has been awarded any contracts within Test and Trace. I went to Oxford University together with 10,000 or so people at the time, so it is entirely possible that I was at university



at the same time with people, but there is no one that I am aware of who is a close friend or a conflict of interest that I have not already declared.

Dawn Butler: Thank you very much. Thank you, Chair.

Q1936 **Zarah Sultana:** My first question is about the zero-Covid strategy that we have seen work in other parts of world. When we look at places as diverse as New Zealand, Vietnam, and Taiwan, there have been very few deaths, and we can say that lives are somewhat back to normal. Baroness Harding, should the UK adopt a zero-Covid strategy to drive down cases to low enough levels that test and trace and isolate with adequate financial support can work effectively to prevent community outbreaks?

Baroness Harding: To be really honest, Ms Sultana, I do not think that that is for me to decide. That is for our public health experts to advise and for Ministers in the Government to decide.

Q1937 **Zarah Sultana:** Thank you. I will go back to the question about the 20,000 people who are not self-isolating daily, a point that you made earlier. This is the vast majority of people who of course should be isolating, and it affects the viability of test and trace as a whole.

You mentioned one of the reasons being financial. The £500 one-off payment, of course, does not apply to people who have no recourse to public funds, people who are told to self-isolate by the app, parents of children who have been told to self-isolate, small business owners, sole traders, and self-employed workers. There is the added fact that there are around 2 million people who are low paid and are not entitled to sick pay.

A year on, we are still talking about sick pay. It was one of the things that many of us were talking about back in March. In 2018, the sick pay levels in the UK were described as manifestly inadequate and not in conformity with the European Social Charter.

Do you think that it is about time we increased sick pay to the living wage levels to allow people to self-isolate when they need to? I ask this question because it affects test and trace and whether it will work or not, and whether it has adequately worked till now.

Baroness Harding: Maybe I will pick up a couple of the details that you have said first and then I will answer your question. Just to be clear, you are able to apply for the £500 financial support payment if you have been contacted by the app as a contact. You have to give us your personal details, but you are able to, and that has been up and running for over a month now. In fact, Wales just recently rolled out the same capability.

Secondly, you are also able to apply if you are self-employed. You do have to be able to demonstrate that you cannot work from home and that you meet the benefits criteria—that you are eligible for specific benefits. Finally, local authorities have been granted funding—a discretionary fund—that enables them to grant £500 financial support to individuals



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who do not meet the criteria of the national scheme. So it is not quite as dark as you described, just to be clear about that.

That said, I have tremendous sympathy with people who are struggling with the practical, emotional and financial challenges of self-isolation. We all have to keep working harder together in our team of teams with local authorities and across national Government to work out how to support them.

The specifics of sick pay policy are definitely not in the purview of Test and Trace and are clearly part of the Government and Treasury decision making.

Q1938 Zarah Sultana: Thank you for clarifying the eligibility of the £500 payment. I have come across articles where local councils are struggling because of the demand for this one-off payment. It is on a council-by-council basis if they are able to offer that discretionary payment, so there is a challenge there. You mentioned earlier being able to offer advice based on the work that you guys are doing in Test and Trace. I would like to think that you can offer the Government advice on sick pay as this would be a really important incentive to allow people to self-isolate.

My next set of questions are on mass testing. Mr Hewlett, the interim analysis of the Liverpool citywide pilot published in December concluded that there was no clear evidence that the introduction of mass testing in Liverpool impacted on cases or hospital admissions. Has trialling since then of lateral flow tests confirmed this conclusion?

Mark Hewlett: On lateral flow devices themselves, clearly they deliver rapid results and are significantly cheaper than PCR technology because there is no laboratory required and there are no reverse logistics. They are very easy to distribute. The key role for lateral flow is that it plays a dual role with PCR in our testing and diagnostic capability. It is not about displacing PCR. It is about supplementing it, and screening and surveilling the population who are asymptomatic, remembering that roughly a third of people who are asymptomatic who have the virus do not know they have it. The beauty of lateral flow is that you can test infectious people very quickly and therefore trace and contain them quicker than you would have been able to do through the traditional PCR technology.

From the purposes of our deployment into Liverpool, it was a really good example of the team-of-teams strategy that Baroness Harding has referred to. We worked very closely with the civic leadership team, the local public health experts in Liverpool, and the Ministry of Defence came in alongside Test and Trace to do what was an unprecedented citywide testing project. The 800,000 people who reside within Liverpool regional city were offered lateral flow testing through asymptomatic test sites that were stood up very quickly.

Clinically, we had a standard operating procedure that was set up very quickly, and we deployed the testing. I think 1,000 people were identified



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as positive who would not have been identified otherwise. Therefore, we were able to break the chains of transmission and contain those people very quickly. We learnt an awful lot from the Liverpool project.

Q1939 **Zarah Sultana:** Last week, we had two directors of public health who told us that lateral flow tests could be useful at identifying new cases of infection, but they were cautious about use as a test to enable activity such as access to schools. Do you agree with that?

Baroness Harding: Might I pick that one up, if that is all right, as it is a broader policy question? To add into what Mr Hewlett has just said, we have registered more than 10 million lateral flow test results now. This is a huge scale. In doing that, we have identified nearly 100,000 people who had the disease and did not know they had it. In doing that, that is 100,000 chains of transmission that we have broken as a result of this new technology. I would agree with the view that the directors of public health set out to this Committee last week that it is very clear that these tests can be helpful in finding cases, and they can find positive cases in all settings.

Schools have been extremely effective in rolling out tests into primary schools and secondary schools over the last month to regularly test teachers. We are finding that teachers are testing twice a week regularly and, again, finding people who did not know that they had the infection. These are teachers who need to come into school to teach our key workers' children and the most vulnerable children. Testing has an important role to play in schools, primarily to find cases, and, in doing that, we break the chains of transmission and make society as a whole safer for us in the same way that regular testing in the NHS and in social care using lateral flow tests is helping us to break chains of transmission.

Q1940 **Zarah Sultana:** There was a discussion within the science community about the effectiveness of lateral flow tests and the levels of false negatives one can get with those tests. Have you considered other types of testing within schools?

Baroness Harding: I am aware of the scientific discussions. We have undertaken very rigorous evaluations led by our senior clinicians and our team at Porton Down. We have rolled out lateral flow tests cautiously, I would argue, over the last six months in a variety of different settings and published papers with Oxford University and other leading academics in Liverpool. I quote Dr Susan Hopkins, our chief medical officer, who said: "I think it is important to remember that no test is perfect. No test will give you 100% sensitivity and 100% specificity"—to be completely perfect.

A lateral flow test, as Mr Hewlett said, is complementary to our higher-sensitivity PCR testing because it is faster—with a 30 minutes' turnaround—and easier. You can do it yourself in your home or in your workplace rather than needing to send the test off to a laboratory for processing. The clinical advice we have had is that twice-a-week testing



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with a lateral flow test, because you get the result immediately, and if you are positive you immediately start isolating, is every bit as effective or arguably possibly more effective than once-a-week screening with a PCR test with the added complexity that a PCR test brings.

So, no, we have not considered using other slower—no, more cumbersome—testing technologies in schools. It is the ability to deploy lateral flow tests in real scale affordably and quickly in a way that all of us will get used to as a part of everyday life that makes them so effective at finding cases in schools and other institutional settings.

Q1941 Zarah Sultana: You mentioned the stat that about 100,000 people have been identified as asymptomatic carriers of the virus. Do we know about the adherence to self-isolating from people who have been identified through sites and other means by doing lateral flow tests?

Baroness Harding: I am afraid I do not have a specific survey that splits out people's reported compliance with isolation based on whether they have had a lateral flow test or a PCR test, partly because the rate of scaling up our lateral flow tests has been so quick over the last six weeks.

We do know that, if you have received a positive test result of any type of test, you are much more likely to follow the guidance than if you have been told that you have to isolate when you feel completely well and you have not tested positive. We know from our other surveys that people who are positive cases are more likely to isolate, so I would expect that to be similar with a lateral flow test, but I do not have the evidence to prove it at this stage.

Q1942 Zarah Sultana: Does that data exist in some form somewhere?

Baroness Harding: Not yet. It is too soon. As I said earlier, calculating compliance with isolation is more an art and less a science—it is a social science really—relying on people's self-reported behaviour. We continue to gather that data, but we do not have sufficient numbers to be able to split out PCR versus lateral flow positives yet.

Q1943 Zarah Sultana: You have previously told the Public Accounts Committee that the Government have hundreds of millions of lateral flow tests and they have committed to roll these out to local authorities on a regular basis. Are local authorities ready to deal with the scale of the roll-out and will they be able to do this on a daily basis?

Baroness Harding: I think local authorities are doing an absolutely brilliant job rolling out community testing. We are now working with the majority of local authorities alive and we expect to see more local authority-run asymptomatic testing sites opening literally every day. It is a real credit to their work and the team-of-teams philosophy that the roll-out is going so well.

Q1944 Zarah Sultana: Will they be provided with any more financial support that you are aware of to be able to support the roll-out of testing?



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Baroness Harding: In the community testing model, for every test conducted via community testing, local authorities receive £14 per test to be able to fund that roll-out.

Q1945 **Zarah Sultana:** My final question is about universities and schools. What have we learnt from the surge in demand for testing from last autumn in anticipation of reopening, whenever that might happen, when it is safe to do so?

Baroness Harding: Clearly, we have learnt so much in the course of the last six months about the disease, about behaviours, and about the need to manage demand and capacity. I would point to the way that the testing and tracing teams led by Mr Hewlett and Mr McManus managed the surge in demand in the run-up to Christmas and through new year.

We have now built a very large testing capacity in both PCR testing and lateral flows that enables us to cope with unpredictable shifts in demand. All of us as a society have become much more used to regular testing as a part of life. Over a third of the population have now had at least one PCR test, so it is a much more normal thing. As, God willing, we start to open up schools and universities, we are well placed to provide regular access to testing to pupils and teachers in both sectors.

Chair: Thank you, Zarah. Graham Stringer had a specific follow-up before we go finally to Carol Monaghan. Graham may have inadvertently disconnected himself. We will go straight to Carol for her questions and we will come back to Graham.

Q1946 **Carol Monaghan:** Thanks, Chair, and to Baroness Harding for the evidence so far. The last time we spoke we discussed the anticipation or lack thereof of the spike in demand for testing when schools returned, and you have said already to my colleague that you are ready for schools to go back. In Scotland, we expect some return to classes this month. In England, it is 8 March. Can you say a bit more about the specific preparation that has been put in place for the return to school?

Baroness Harding: Let us take the two different types of testing. With PCR testing, if we were to see a surge in Covid-like symptoms, which is one of the things that happened in September, we go into a period with over 800,000 tests per day capacity and sufficient headroom, as we have discussed earlier in the hearing, to be able to cope well with additional demand if, on returning to school, lots of children have Covid-like symptoms and need to be tested.

I am very confident that we have a substantially larger testing infrastructure with spare capacity than we had in September. As I said earlier, the way that we coped with the increasing volume over Christmas and new year shows you that that has now been road-tested in reality as well.

On regular testing, to help find people who may be asymptomatic and not know that they need to get a test, in England—and I can only speak for



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England on this, I am afraid—the English schools have done a really brilliant job in getting started in testing teachers in both secondary and primary, and in testing secondary students when they first came back in January. We work very closely with the Department for Education and are continually learning about how to fine-tune and improve those processes. We are in a good place to provide testing support to the school sector.

Q1947 **Carol Monaghan:** One of the images we saw back in September was large queues outside testing sites and people having to travel across the country in order to access those. Can you say a bit more about the availability of local testing, because many people do not have the ability to travel great distances in order to access this?

Baroness Harding: I will give you one statistic, but Mr Hewlett might like to talk to you a bit more about the detail. The average distance people have needed to travel last week to get a PCR test was 2.1 miles. I am very confident that there is local access now. I do not know if Mark wants to give a bit more detail.

Mark Hewlett: On the numbers, it is really important to point out the size and scale of the network that we have built. There are now well over 800 physical test sites available of which at least 450 are local test sites. The 2.1 miles is a great reduction on the travel distance people were expected to travel in September.

In addition to that, we have now a fleet of over 300 mobile test units—soon to be 500—which can be deployed rapidly where they are most needed. That has been borne out in examples in Kent where we helped the hauliers get over the border as quickly as they could over the Christmas period. We surged into schools in London as well during December to help with outbreaks there. This capability is much more flexible. It is centrally co-ordinated but locally led.

The local teams tell the central team where they would like the MTU to be positioned and the communication is to the community that the MTU is on site. The new MTUs are very much weather resistant and can administer at least 1,000 tests a day. They are supplementary to our existing physical sites.

We now have 87 regional test sites—the drive-tos—which is a significant increase on where we were in September. We are confident going into expected surges with not just our physical test sites but also the capacity we have built in our diagnostic capability. The two things combined, plus lateral flow, are really game changers compared to where we were in September.

Q1948 **Carol Monaghan:** I will move on from the school sector and ask a quick question about universities. Would you envisage moving the mobile testing facilities that you talk about into university settings to operate in the same way?



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Mark Hewlett: We have deployed mobile testing through PCR into universities in the past. We have developed a standard operating procedure for universities to do asymptomatic testing with lateral flow devices. We would rather go down that route first, and then, if there is an outbreak, we surge a mobile testing unit into the university to capture the PCRs and contain them quickly.

Q1949 **Carol Monaghan:** How much input has Test and Trace received from behavioural scientists to support the contact tracing and particularly the isolation aspect of the programme?

Baroness Harding: We have worked very closely with the behavioural insights team across the programme from the very beginning. We set this out in our business plan published in December that we are fundamentally providing an essential citizen service. Continuing to understand how we operate the service in a way that genuinely works for all communities is a really important component of what we do. We do in-depth work. Perhaps Mr McManus would like to give a bit more detail specifically on what we have done on behavioural insights into tracing and isolation.

Steve McManus: It goes to some of the earlier points we made about the really important relationship with our local teams and how we have really strengthened that relationship over the last period. We are working with the behavioural insights team to sponsor and support a number of pilots in different parts of the country to try to work locally around the communications and the information that would support that nudge for a citizen into isolation decisions and to understand aspects around how that communication can be adapted particularly to local needs around that support.

We are working particularly with areas across Yorkshire and Humber at the moment and in the south-east around a number of pilots particularly using behavioural insights to try to understand how we move that forward. Resources are absolutely available nationally to support local understanding and communication opportunities that we can develop in partnership with local teams.

Q1950 **Carol Monaghan:** We have been presented with evidence that suggested that as many as 40% of those who should be self-isolating do so for nine days or less. What sort of impact does that have on the viability of your testing and tracing?

Baroness Harding: We covered some of this earlier on in the hearing, so I am sorry if I am repeating myself. Clearly, every person who self-isolates when they are told to by NHS Test and Trace plays their part in breaking the chains of transmission. The evidence that you quote that I have been using as well is people's self-reported adherence, and that is complete adherence.



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We also understand that, on average, 80% of people are not coming into close contact with any other people during their period of isolation. For every individual who more fully complies and who we are able to support to comply, the impact on R improves, but it is not a binary 0/1 thing. It is an incremental improvement, step by step, with each one of us as we cope with the challenges of isolation.

Q1951 **Carol Monaghan:** Do you think that message is getting out strongly enough—the incremental aspect of it?

Baroness Harding: That is a great question because I understand it is entirely human nature for us to want to have binary 1/0 solutions. If there is one thing we have learnt from Covid-19, it is that infectious diseases do not allow that to be the case.

Fundamentally, the way that we combat the disease is through a number of different interventions that require societal change. We are all human beings, and no one is perfect. Getting that consistent societal behavioural change is probably a life's work rather than something that you can do in nine months.

Steve McManus: Working with our local health protection teams, local directors of public health and local authority teams, it is worth saying that the overwhelming percentage of our citizens are absolutely striving to comply with the requirements when asked to do so. That is absolutely the feedback that we get despite some of the challenges that Baroness Harding outlined earlier on.

Baroness Harding: I would add that, as we look forward, a number of members of the Committee have referenced the Asian countries that experienced so much challenge with MERS and SARS. Cultural norms in a number of those countries were established a while ago that, if you had flu-like symptoms, you did not go out and mix, and that if you had a cough or cold you wore a mask in public. That has been the norm in Asia for some time.

As we come out of the Covid crisis, looking forward, I would hope that we also adopt some of those cultural norms. The British stiff upper lip of, "I have a horrid cold or flu but I am still going to soldier on and come into work," turns out to be the wrong thing to do, not just for you personally but also for your work colleagues and your community. Going forward, I would be optimistic that the National Institute for Health Protection could establish some of the behavioural changes we are seeing now as norms in our society.

Q1952 **Carol Monaghan:** When we see reports of breaches of Covid rules or of isolation on television, is there a danger that we feel as though we are the only ones who are following the rules and the rest of the population is looking for ways round it? Should we be doing more to highlight the fact that the majority are, as you say, following the guidelines?



Baroness Harding: You highlight a broader challenge of modern media rather than something that is directly associated with test and trace. Certainly, we work very hard across the programme and with all our partners to make sure that we highlight the fantastic work that people are doing on the ground and the individual stories of people really striving to do their best and to do the right thing. I agree with Mr McManus that all the feedback is that the vast majority of the British public are rising to that challenge rather brilliantly.

Q1953 **Carol Monaghan:** Maybe that is a message that lots of us have to get out. Moving on to the vaccine roll-out, there have been suggestions from behavioural experts that there will be poorer adherence to self-isolation as a result of the vaccine programme. Are you monitoring that, and what sort of strategies are you putting in place to deal with it?

Baroness Harding: I think about the next phase for NHS Test and Trace as a phase of learning to operate with vaccines and variants that present both huge opportunities to see infection rates come down but also substantial challenges. Obviously, the challenge is mainly from the variants.

As more of the population is vaccinated, we will see a higher proportion of asymptomatic cases than symptomatic cases—even higher than we have got used to. That will mean that regular asymptomatic testing will be increasingly more important, particularly in our high-risk environments where people would still be vulnerable, remembering that the vaccine is not 100% effective. It is important that we are still constantly looking for infection in high-risk environments.

If I go back to your previous question, explaining that and helping everyone to play their part is something that we will still need to do. If you have been asked to isolate, it is really important that you do because people could still be exposed. With new variants, the big concern and worry is that the virus mutates and succeeds in finding a form that can escape the vaccine, and we need to have a scaled surveillance process in place at the border, overseas, and in the UK to spot any outbreaks— asymptomatic or symptomatic—to scale up our genomic sequencing and make sure that we stamp out dangerous new variants as they arise.

If anything, the challenge for NHS Test and Trace in the vaccines and variant world is an even greater one. We go into it with a huge-scale organisation and service that is delivering on the targets that were set, but the virus has changed the rules of the game and the science is changing the rules of the game with the vaccine. We are ready to move towards that, but we will all need to keep learning how test and trace is a part of everyday life rather than something that will disappear just because the vaccine has come.

Q1954 **Carol Monaghan:** Following on from that, it has been suggested that the response to Covid will be a much longer-term response. It is not going to end with a vaccine programme. What scenarios are you planning for? You



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have described some of them in terms of variants. Are there other scenarios that you think could be problematic?

Baroness Harding: The central planning assumption that we are making operationally for NHS Test and Trace is what we call the long goodbye. It is likely that we will want to keep testing and tracing at scale for quite some considerable time precisely because it has a material impact on reducing R without the economic and social consequences of the restrictions that we are currently living under. It will be one of the very last things that you would want to stop doing as the prevalence of the disease goes down and down.

As you say, I have highlighted that, even in a world where Covid is completely under control, the National Institute for Health Protection will need to play a role in constant, vigilant surveillance to make sure that we spot outbreaks. As I understand it—and I am not a clinician or a scientist—there is reason to believe that, because in this modern world we live increasingly close together in major urban conurbations close to animals, we will see viruses jumping from animals to humans again.

It is not a coincidence that we have seen three in the course of my working life in SARS, MERS and Covid-19. The underlying capability to surveil and to keep an eye on what might be happening in the community, and to be able to test and trace and surge capability when you need it, is something that we will need in a modern society for the future.

Q1955 **Carol Monaghan:** In 10 years' time, let us say we have the next virus emerging. Are we ready? Would we be ready to deal with it? Are we better prepared, and are we able to put into place scenarios that have taken us—let's be honest—a year to do this time?

Baroness Harding: As a country and as a world, there is a huge amount of learning to be taken from what everyone has gone through in the last year and will continue to. Let us remember we are still in lockdown. It would be overconfident to say, "Job done. We have learnt everything we need to learn." There is lots more that we can do and will do. It is important that we do not take our eye off the day job as well.

My team is single-mindedly at the moment focused on supporting the exit from lockdown and supporting that return to a much more normal life, but I am well aware that we will want to take learnings that we have already had and learnings that undoubtedly we will have over the course of the next few months as we learn to operate in that vaccine and variant world. It is too early to make that statement at this stage.

Q1956 **Carol Monaghan:** Thank you. I am finished with my questions, but the other witnesses may want to make comments on the areas that I have asked about.

Mark Hewlett: I think Baroness Harding summed up the response to the final two questions perfectly. We will need to be continually vigilant, and



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our system will continue to need to respond with velocity for the variant and vaccine scenarios currently in place. Everything that we are doing as professionals working on test and trace is aimed towards that. It is an uncertain future, but rest assured that we are building a programme that is capable of delivering the targets that have been set.

Steve McManus: The learning over this period in how local leadership that is nationally supported can develop a robust approach for the future has been important. In particular, in the trace environment as we come into the next period, the learning we have developed about how we take the fantastic work that our Public Health England colleagues have done previously and build on things like enhanced contact tracing, which in future will become an important norm in how we operate across that locally delivered and nationally supported way of working within the national institute, will be a fundamental feature going forward.

Q1957 **Chair:** Referring to the long-term approach that you both emphasised, we know that you, Mr McManus, are on secondment from running a hospital. Mr Hewlett, is your appointment fixed term, or are you here for the long haul?

Mark Hewlett: I am on a fixed-term appointment as a civil servant for 12 months.

Q1958 **Chair:** From August?

Mark Hewlett: From 26 August.

Q1959 **Chair:** Baroness Harding, given what you said about having an organisation that will be there for the long term, are you thinking about the shape of the organisation that will run this after this summer?

Baroness Harding: Yes, absolutely. You have heard me refer several times to the National Institute for Health Protection as we bring together the deep scientific and technical expertise of Public Health England with the scale, operational skills and capabilities of Test and Trace.

The NIHP will formally be constituted at the beginning of the new financial year and will be working with both organisations and all the people within it on what the formal new structures look like, so that by October we have that new organisation fully staffed and up and running. It is important that we take this carefully, given that we are still in the midst of the pandemic, so we are not rushing it but deepening the working relationships as we go in the work that we have been doing recently, for example, on new variants.

Mr McManus has done a great job in recruiting his successor, who joins us as a permanent civil servant. This is part of the overall transition we described earlier about putting the organisation on to a long-term footing.

Q1960 **Chair:** As for the future, you talked about constant vigilance and



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surveillance, which implies an ongoing testing capability. We have made progress in PPE and vaccine manufacturing to locate manufacturing within the UK over recent months. As for lateral flow tests, which we are ordering in the hundreds of millions, when will the majority of supply be sourced from within the UK?

Baroness Harding: I cannot give you a firm date for that yet. We have been working closely with a number of different UK manufacturers of different types of lateral flow tests. I am confident that we will see the UK manufacturing base grow, but I am afraid I do not have line of sight of the point at which they would account for the majority yet.

Q1961 **Chair:** Do you have a feel for how it is at the moment?

Baroness Harding: At the moment, it is a very small proportion of our supply. This is a complex manufacturing process. We talked earlier in the hearing about the importance of the accuracy of these tests. We work closely with Sir John Bell, and our team in Porton Down runs a very rigorous validation process for all potential new lateral flow tests. I would say that the vast majority from all over the world do not get through that process. It is important that we maintain very high standards. We have been working closely with a number of UK manufacturers who are working through that, which is good news.

Q1962 **Chair:** If, as you say, testing will be a continuing and perhaps permanent feature of our health system, as a matter of strategy, as with vaccine manufacturing, where we established the Vaccine Manufacturing Innovation Centre, is there a case for a deliberate strategic move to develop testing manufacturing capability in this country?

Baroness Harding: Very much so. Maybe we have missed a trick in testing by not branding it as such, but one of the reasons we are in our current position of strength on lateral flow tests is because of the early investment in new testing technologies that the testing team spearheaded over the course of the past nine months.

I stress that it is not just lateral flow testing. We are working collaboratively with a number of UK manufacturers and developers of other testing technologies. I think it will be another core capability of the National Institute for Health Protection, which is to work collaboratively with both the academic sector and diagnostics industry. We see innovation where you get that partnership working between our public health system and the diagnostics industry and academia.

All those three areas ought to be ones of great strength for the UK and something we should take out of this. The success of the build and operation of testing is a matter we need to take forward for both health protection and our life sciences strategy beyond the crisis.

Chair: Thank you very much. Graham Stringer.

Q1963 **Graham Stringer:** I will try not to disappear this time, Chair. Rather



confusingly, there was an experimental testing regime in Salford called Moonshot based on direct LAMP saliva tests. It was withdrawn because it did not seem to be working. Can you give us a summary of what happened and whether there will be any return to that kind of testing regime?

Baroness Harding: As you say, direct LAMP is one of the other technologies we have been investing in and developing. It is being deployed as a technology in a number of NHS organisations at scale. These are saliva-based rapid turnaround tests, as you know. It comes with some complexity because, unlike lateral flow tests, it still needs a laboratory and specialist technicians to complete the testing process, but it is much, much quicker than PCR testing and is being used by, I think, up to 10 NHS trusts as we speak. Mr Hewlett probably has more details.

Mark Hewlett: It is 14.

Baroness Harding: Thank you; I was not quite right. It is a technology we will continue to invest in, and develop and work with both the NHS and other institutions where it is appropriate for them to use it.

Q1964 **Graham Stringer:** Can one draw the implication from that that you need skilled technicians to use it? In the way it was used in Salford, we did not get the right results because in the field it is more difficult to get correct results.

Baroness Harding: No. The performance of the test is very good, which is why NHS organisations are using it instead of lateral flow tests for regular asymptomatic testing. It is more a matter of needing experienced technicians, who are in scarce supply, and laboratory space to be able to set it up.

In the practical challenges, goodness knows, of real scale that our NHS trusts are currently facing, with the use of lateral flow devices at home by staff for regular screening, a large number of organisations have judged that that is the most effective and efficient way of providing regular testing. The 13 NHS organisations that have already embarked on trialling LAMP have found it very effective. You should not take it that the technology is ineffective; it is just more complex to implement than lateral flow and, therefore, right now is not being used on the scale that might have been foreseen earlier.

Q1965 **Graham Stringer:** Going back to lateral flow, the figures used by the Prime Minister seemed to indicate that he wanted a lateral flow test for every member of the population every week. *The Daily Telegraph* carried an article saying that that would imply 41% of false positives. If that is the case, it would mean a lot of people who did not need to self-isolating and that would damage the economy. Do you recognise those figures, and is that a problem?

Baroness Harding: I am afraid I do not recognise those figures. The specificity of lateral flow tests is very high; it is above 99%. If you get a



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positive result on a lateral flow test, it is 99% likely that it is indeed positive, so much so that at current prevalence levels we no longer require members of the general public who take a lateral flow test to take a confirmatory PCR. We are very confident that it would give you a positive result.

Lateral flow tests are less accurate in sensitivity, in the sense of the likelihood that if you get a negative result you are truly negative. The PCR test catches very, very early infection where you are less likely to be infectious and also infection right at the end of the disease where you are also less likely to be infectious.

The research done by Oxford University and Porton Down suggests that lateral flow tests will be successful in finding circa 75% of people who are infectious. They are useful in catching people who do not know they are positive. If we catch 75% of positives in communities that would not otherwise be testing, it is a thoroughly good thing, and there I am quoting Dr Susan Hopkins again.

Think of these as being in addition to other tests. You are using them in environments very regularly as part of everyday life when you would not otherwise be tested and, therefore, they are very effective at finding tests. You should not use them as an indication that, because you have tested negative, you should go and take some risks that you would not otherwise take, because there is a 25% chance it has not picked up that you are positive.

Q1966 Graham Stringer: I think you have been before the Committee three times and probably had eight or nine hours of evidence giving. You have answered lots of questions. We might disagree on emphasis, but you have told us obviously where you have done well.

What have been the biggest mistakes or regrets you have had? You said earlier that we are all human beings and make mistakes. What do you wish had gone differently?

Baroness Harding: I try to look forward, not look back, but one of the biggest challenges we faced in Test and Trace—I alluded to it earlier—is that all of us, and I am no different, want there to be a simple, easy solution to Covid-19. One of the challenges that the amazing team of teams that we have built together in NHS Test and Trace has faced is expectations being too high and that testing and tracing on its own will solve the problems.

What we have learnt in the past nine months is that it is one of the things we can do, not the only one, and it cannot solve our problems all on its own. If we had been able to manage that better through the course of the past nine months, I think it would have helped. If we had been able to explain that clearly to the general public as a whole, to all of us, it would have made it easier for everyone to follow the guidance and advice that test and trace was offering.



Graham Stringer: Thank you.

Q1967 **Chair:** Referring to Graham's questions on lateral flow tests, is it not a question of communication? Is it not to be understood that a lateral flow test is a test of current infectiousness with Covid rather than a definitive test of whether or not you have it? It is a test of current infectiousness, is it not?

Baroness Harding: Yes. It is much more effective as a test of infectiousness than a PCR test is.

Q1968 **Chair:** One of the previous times you appeared before the Committee was when schools and universities went back in September and many employees started to go back to work. The National Audit Office, with the benefit of hindsight, reflected that that should have been anticipated and prepared for better. It commented that NHS Test and Trace could face similar spikes in the future that it would need to be prepared for.

Earlier in this session you said, "We've seen the new variant emerge, which is something none of us was able to predict." Would you like to reflect on that? Is it not possible to be primed and ready to respond to mutations that most scientists we have heard from across the year felt were not only likely but almost certain?

Baroness Harding: On the basis that this country is absolutely at the leading edge of genomic sequencing, I would argue that we are better placed than any other country in the world to be able to spot mutations and predict which ones will cause material problems and which ones will not.

What I was referring to earlier is predicting exactly when that is going to happen and, therefore, being ahead of the curve. That is much harder. I do not think any scientist in the world would be willing to sign up to a date stamp as to when specific mutations are likely to occur. That is why it is so important that we have surge capacity in our test and trace system. The NAO, as you quoted, wrote that at the end of October/early November. We are primed and we are ready to respond to surges in demand now. That is why we have the headroom we do in both testing and tracing.

I would point to the success of the service over the Christmas and new year period where in the space of three weeks we saw the volume of contacts needing to be traced grow by more than 300% and similar numbers of positive cases at that sort of rate. The system has performed better as that volume has grown because we were ready for it.

I think we are in a place to be able to respond to the unexpected, but we should recognise that this is still a novel virus and, therefore, the deep scientific and clinical expertise we have in this country is a really important part of the overall public health response, together with test and trace, so that we can be as fast as possible at spotting new issues as they emerge.



Q1969 **Chair:** Thank you. Everyone recognises the performance and improvements that have been made over the months and the hard work that has gone into that, and everyone wishes you well. We want your organisation and team to succeed.

We recognise that this is tremendously hard work and a lot of decisions have to be taken in uncertainty, but we are coming to a period in which we will be reliant upon you and your team very heavily again as we contemplate lifting and easing restrictions at a time when the virus will not have disappeared. There is a big commitment of £22 billion of public money backing this, so we do need to have confidence, if we are to lift the restrictions, in whether the end-to-end reduction in transmission and the breaking of chains we talked about will be effective—in other words, whether it reduces the R rate.

In the autumn, SAGE said that the test and trace system at that time was having a negligible impact on R. You said in evidence today and to the Public Accounts Committee that you have evidence that now it has a significant impact on R. On that assessment in great measure will depend decisions on how we come out of lockdown, which the Prime Minister and his advisers will be taking over the next few weeks. I do think it is important that we see the basis of that assessment and we can have confidence in it. If a significant reduction in R is being made, that is great. We all welcome that and take confidence from it, but we do need to know what it is.

So I hope that you will be able to provide, before these decisions are taken by the Government, the basis on which we can assess the reduction in R that you feel capable of giving to the system during the months ahead. Would that timetable meet with your intentions, Baroness Harding?

Baroness Harding: It absolutely meets with my intentions. We will endeavour to publish as much detail of our technical assessments as possible and as quickly as possible, but I would also hope that the improvements and the impact that we have set out to the Committee today give you a measure of confidence of the scale and speed that testing and tracing is now operating in this country and our ability to adapt very quickly, whether that is to set up testing for hauliers in Kent, to surge across the country as we are today in specific postcodes to find new variants, or to deepen our extended contact tracing. We are in a position today to be able to respond to the demands that we know the country is making of us.

Finally, I would repeat what I just said to Mr Stringer. We are one element of the country's response as we come out of lockdown; we are not the only one. We will play our part to the full, but we are not single-handedly the silver bullet for Covid. We need to be in the right space as a public service doing our utmost in a team of teams that includes the vaccine, individual personal behaviour, hands, face and space, and following the guidance.



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Chair: Thank you for that. We recognise that you and your fellow witnesses today—indeed, your whole teams—are making an extraordinary commitment to public service in this learning as we are going on. As you said in answer to an earlier question, clearly you are not doing this for the financial reward or for an easy life, and that goes for your two colleagues here today and all of your teams.

We are very grateful for that and for your evidence to us this morning. That concludes this meeting of the Committee.