

Science and Technology Committee Health and Social Care Committee

Oral evidence: Coronavirus: lessons learnt, HC 877

Tuesday 10 November 2020

Ordered by the House of Commons to be published on 10 November 2020.

[Watch the meeting](#)

Members present:

Science and Technology Committee: Greg Clark (Chair); Aaron Bell; Dawn Butler; Chris Clarkson; Katherine Fletcher; Carol Monaghan; Graham Stringer; Zarah Sultana.

Health and Social Care Committee: Jeremy Hunt; Paul Bristow; Dr Luke Evans; Neale Hanvey; Barbara Keeley; Dean Russell; Laura Trott.

Questions 318 - 472

Witnesses

I: Professor Dame Anne Johnson, Professor of Infectious Disease Epidemiology, University College London; Professor Sir Chris Ham, Chair, Coventry and Warwickshire sustainability and transformation partnership, and former Chief Executive, the King's Fund; and Professor Dominic Harrison, Director of Public Health and Wellbeing, Blackburn with Darwen Borough Council.

II: Professor Sir John Bell, Regius Professor of Medicine, University of Oxford; Professor Jo Martin, President, Royal College of Pathologists; and Professor Doctor Gérard Krause, Head of Department for Epidemiology, Helmholtz Centre for Infection Research, and Director, Institute for Infectious Disease Epidemiology, TWINCORE, Hannover.

III: Baroness Dido Harding, Executive Chair of NHS Test and Trace programme; and Dr Susan Hopkins, Chief Medical Adviser, NHS Test and Trace, Department of Health and Social Care.



Examination of witnesses

Witnesses: Professor Dame Anne Johnson, Professor Sir Chris Ham and Professor Harrison.

Q318 **Chair:** Welcome to this joint meeting of the Science and Technology and Health and Social Care Committees. As part of our inquiry into the lessons learnt from the response to Covid-19, we are considering today testing and contact tracing.

The first panel, which I will chair, will consider contact tracing both in the first few months of the pandemic and more recently. Then my colleague, Jeremy Hunt, will chair a panel to consider expert views on testing. That will be followed by a final panel, which I will chair, with the chair and the chief medical adviser of NHS Test and Trace, Baroness Dido Harding and Dr Susan Hopkins.

I am delighted to introduce our first panel of witnesses. Professor Sir Chris Ham is the chair of the Coventry and Warwickshire health and care partnership. From 2010 to 2018, Chris was chief executive of the King's Fund. Dame Anne Johnson is professor of infectious disease epidemiology at University College London, and currently president-elect—as all the best people are—of the Academy of Medical Sciences. Professor Dominic Harrison is director of public health at Blackburn with Darwen Council. Thank you very much indeed for joining us today.

I will start with a question to Sir Chris Ham. You are very familiar with the public health world and the NHS from your time working in many positions. Would you give us your view, when it comes to contact tracing, as to what the balance should be between national activity and local activity through directors of public health and local Public Health England teams?

Professor Sir Chris Ham: We need both national and local, but we know from a lot of experience, both in this country and around the world, that there has to be local leadership of contact tracing by people who have been trained in public health, who know what contact tracing is and particularly who are embedded in their communities and can work effectively with those communities. If that is to happen, those people need the resources—people and funding—to be able to do the work, particularly in the situation we find ourselves in now, when the number of cases is rising and the number of contacts is increasing as well.

That can be supported both at a regional level, as it has been very effectively through Public Health England and the health protection teams that have done fantastic work over recent months, and nationally in a framework that clearly sets out what our strategy is on test, trace and isolate, and how the three must work as one to be effective on the ground. The difficulty we have is that the Government have built a test, trace and isolate system that is biased too much towards the national and is too late in providing resources and staff at local level, where most of the effective work on contact tracing has to be done.



HOUSE OF COMMONS

Q319 **Chair:** You think that the balance was too much to the national during the early phase of the pandemic and now, or has it changed during the time we have been working on it?

Professor Sir Chris Ham: Certainly in the early phases, if you go back to March, we simply did not have the capacity for testing, tracing and isolating that we needed in relation to the volume of cases. I know the Committee has explored that previously with Public Health England and sought the scientific evidence on which the decision was taken on 12 March to abandon community testing. I believe that evidence has not been forthcoming.

What happened after that was that the Government realised a lot of work had to be done very quickly to increase capacity for testing; to provide the resources for contact tracing; and to support people to isolate, where that was the appropriate thing to do. That whole process was highly centralised around No. 10, the Department of Health and Social Care and the Cabinet Office. On contact tracing specifically, the Government chose to go down the route of bringing in private sector expertise through Serco and Sitel to run the national system. Only belatedly have they recognised the expertise that exists within our councils and our public health teams.

There has been a shift from national orientation back in March and April through to much more local leadership today. I am sure that we will hear from Dominic Harrison how that is working in one area. But it has been too slow, and if the Government had moved much more quickly over the summer, when the number of infections had fallen, we would be in a much better position today for our councils and our public health teams to do the necessary work.

Q320 **Chair:** You say it was too slow, but would you say we have arrived at the right balance?

Professor Sir Chris Ham: We are getting closer to the right balance. There are some excellent examples, not just in Blackburn. Calderdale is another and Greater Manchester as a system is moving very much in that direction. I am confident that we will end up where we need to be, but frankly this is six or seven months behind the curve. If we had been able to get there quicker, we would have had our defences in place much sooner.

Q321 **Jeremy Hunt:** Sir Chris, as you know, one of the problems with our test and trace architecture is that at the moment only about one in five of the people who are asked to quarantine actually go on to quarantine. Do you think that is linked to the fact that we have a centralised structure rather than a localised one?

Professor Sir Chris Ham: There are three factors at work. One is whether we give people the right kind of financial support, particularly those in low-paid jobs. The second is whether we give them the right practical support around access to medicines, food supply and social contact. The third is who is doing it, which is your question, Jeremy. I



think it is best done locally by people who are part of their communities in the public health teams that know those communities.

The job we are talking about—contact tracing—is partly detective work and partly anthropology. It is knowing your community and knowing how that community varies depending on which suburb, ward or small area you are talking about. You cannot do that at the end of a telephone from a national contact tracing system. You have to know your area and be part of it, and work with community leaders. We see the results; the level of contact tracing is almost 100% where it is locally led and much lower where it is nationally led. That will also be reflected in success around supporting people to isolate, where that is the right thing to do.

Q322 Zarah Sultana: I want to touch on what you just mentioned, Professor Ham. You said that local contact tracing is around 100%, whereas nationally it is much lower. Do you believe that from the very onset the Government should have given local health authorities and local councils more control of the strategy, rather than giving billions to private companies to run it nationally?

Professor Sir Chris Ham: Yes. On your question, the rate of contact tracing is much higher locally than it is nationally. The Government should have chosen to go down the route of supporting councils and giving them the funding and resources to build up their teams. It is not just public health teams; environmental health staff, sexual health staff and, in some areas, the fire service have been drawn in to support contact tracing. Because we are using all those local assets, we are getting good results.

If we could wind the clock back, and if the Government had chosen to go down that path in March/April, when the design of the system we have now was put in place, and if they had drawn in on the ground public health experts like Dominic Harrison to help with the process, we would have had much more success. I am still not sure why the Government chose not to do that. Belatedly, the process of bringing councils more into the picture started in May, in my view, when Dido Harding brought in people from local government and the NHS. It has taken a very long time since we heard the commitment from Baroness Harding to do that, to get to the better position we are in today.

Q323 Zarah Sultana: What do you think was the impact of the decision to halt community contact tracing late in March? What do you think that has done to the overall picture of the spread that we see?

Professor Sir Chris Ham: Do you mean the suspension of community testing in March?

Zarah Sultana: Yes.

Professor Sir Chris Ham: That happened not because it was the right thing to do but because of the lack of testing capacity at that time. I was checking the figures ahead of today. By the end of March, we were doing



something like 80,000 tests a week. That compares with about 1.5 million tests a week today. The testing system has grown impressively over that period of time, but because of the number of cases in the community it simply was not possible to do then what we are able to do now. Testing capacity had to be focused on the high priorities—staff working in health and care and patients receiving that care. It was very sad that that decision had to be taken, but it was not about science. It was about practicalities, given the number of patients who were being infected at the time.

Q324 **Zarah Sultana:** I would like to know your views on the publication of evidence surrounding local restrictions, in particular the Government's decision to enact a local lockdown in the north, particularly Yorkshire, around Eid al-Adha celebrations at the end of July, or any of the other local restrictions.

Professor Sir Chris Ham: My view is very simple. There should be full transparency and full disclosure around all the difficult decisions that must be made if we are to achieve more success, including the example that you have just given.

Zarah Sultana: Thank you very much.

Q325 **Chair:** Perhaps I could ask Dame Anne the same point. Was it right to stop contact tracing on 12 March even though numbers were very high? Is it not the case that every little helps and that every contact that is traced makes a contribution?

Professor Dame Anne Johnson: I was not party to the decisions that were made at that time, so what I observe is in the public domain. One of the real issues was that we did not have the capacity to identify cases, and we had very poor specificity of symptoms in relation to that.

It is important to remember that perhaps the biggest benefit that comes from testing and isolation is the isolation. Perhaps the most important intervention at that time was that people, when they had symptoms, remained at home and isolated, and tried to isolate their families where they could, because of the problems of household transmission.

We must remember that contact tracing is only part of the system. When we did our work on the Royal Society DELVE report, we identified that the main benefit comes from initial isolation when people have symptoms prior to them getting a test. In March, one of the problems I had was that we clearly had a very big epidemic going on, but in the absence of testing we were not able to quantify it or understand the extent of it. That seems to me the biggest limitation that we had at that time. In a sense, we had not realised the extent of transmission by the time we took the first national measures because we did not have a more extensive testing programme.

Q326 **Aaron Bell:** How has our gradual learning about Covid affected our understanding of how we can best use contact tracing? In particular, how



HOUSE OF COMMONS

does the large proportion of asymptomatic infections affect the way in which we do contact tracing?

Professor Dame Anne Johnson: One of the big points we made in the Royal Society DELVE report is that contact tracing is always a leaky system. Even with the best contact tracing system, given that we now know that around 40% of cases are asymptomatic, we will never—even with the best system—be able to identify those cases. When we worked through those figures—you can observe this in the current data—there are losses at every stage of the cascade. People may not get tested if they are symptomatic. They may not isolate. They may not report all their contacts, and so on. It has always been a leaky system.

Our DELVE modelling suggested that even with quite high levels of compliance, when you work through that cascade, the biggest benefit of the system is primarily people isolating in the first place. Remember that household contacts should immediately isolate, so in a sense they are dealt with. If you then add on contact tracing outside the household, another 5% to 15% of transmissions that would otherwise have occurred are prevented.

Contact tracing is only one part of the system. It is worth having that benefit, but a large benefit comes from other non-pharmaceutical interventions, such as people covering their faces, staying socially distanced and reducing their contacts. We were very clear that a test and trace system is very important, but it is only one part of the many interventions we have to make to keep on top of the epidemic.

When you look at the figures now, as demand for testing in the second wave has gone up enormously in the winter phase, you slow down that system. We made three points about it. It has to be fast; it has to have high levels of compliance; and you have to have high covering. Those are the key elements of the system to make it work effectively.

Q327 **Aaron Bell:** You recognise it is leaky. As a more general point, are we asking too much of the tracing element of test and trace? We have seen in Germany that their system has essentially fallen over under the pressure, with Merkel's spokesman saying that the infection numbers are too high to conduct proper contact tracing.

Do we not need more individual responsibility in the system? You acknowledge that household contacts will automatically be isolating. Are we asking too much of the system, given the leakiness at every stage, with the asymptomatic transmission, the lack of knowing who the contacts are and the problems with the app? It can make a marginal difference, but have we basically set ourselves up to expect too much from the tracing element of test and trace?

Professor Dame Anne Johnson: As became clear in the summer, when we had low rates, where contact tracing was very effective, it was at the beginning of outbreaks. We saw that in Tyne and Wear and so on. It is much easier to track down every case and do very forensic investigations



HOUSE OF COMMONS

when there is low incidence. In the summer, that was why it was very important, as Chris Ham has already said, to make sure that we had local teams trying to get on top of outbreaks. You have seen the same problem in Germany.

It is incredibly important to have a good testing system, but you have to accept that it is not going to solve all your problems. You need a combination of interventions in place, and that includes, as Chris Ham said, very clear communication with the public. We emphasised that in our winter report from the Academy of Medical Sciences.

Q328 Aaron Bell: Jeremy Hunt has already asked Sir Chris Ham about isolation. Are we asking too much of people in isolation? Professor Chris Whitty said that isolation is not a matter of all or nothing. Is asking people to isolate for up to 14 days on the basis of a contact rather than a positive test asking too much of people? Would it be better if we adopted a more permissive approach to isolation that was more realistic about what would be achieved?

Professor Dame Anne Johnson: It is important that people isolate when they have definitely been in contact with somebody. We need to think much more clearly. In contact tracing, 75% of contacts being contacted are household contacts who should already have been asked to isolate. Support for individuals along the lines that Chris Ham identified, of physical, social and financial support, with good explanations and help for households, is important on trying to reduce transmission in that context. I am sure we will hear more from directors of public health about the difficulties in crowded households of preventing transmission in the household.

There is, however, discussion and review going on about the length of time that people should isolate, based on the scientific evidence and the probability of infection at different points or the distribution of—

Q329 Aaron Bell: Do you have a personal view on that number?

Professor Dame Anne Johnson: I would like to see more data on the latest reviews of the incubation period. Most people acquire their infection before 10 days, although there are cases after that. We need to review that carefully, and I think it should be considered.

Professor Sir Chris Ham: I want to come back on the previous question. It feels to me that we need to frame this around not just contact tracing but the package of testing, contact tracing and isolating. They need to work seamlessly together. It is about getting the results of tests to the contact tracers very quickly, and the contact tracers then following up very quickly. That will give us a much better position to build on.

Equally, I think your point is well made. If you look at experience in other countries, it is about generating and continuing a sense of collective responsibility, not just personal responsibility. We are all in this together.



Countries that have had a lot of success, like Taiwan, South Korea and Vietnam, seem to have done that by working through a variety of different channels. It seems that they have much more trust in their systems than we have been able to achieve.

Q330 Aaron Bell: In a comparison between east Asian countries and western Europe, do you think that test, trace and isolate can work in Europe with the kinds of levels we are seeing in western Europe at the moment, or is it only ever going to be a marginal benefit through the winter?

Professor Sir Chris Ham: I think it can work. It will not provide the whole answer. It is not just in Asian countries. Sweden has been very much in the spotlight. There are very strongly held different views on the approach they have taken. Clearly, the approach has been one where they have community engagement and involvement because of the culture of Swedish society. Without wanting to recommend the whole package in Sweden, there is a lot we can learn from how they have achieved that.

Chair: We have a few noises off, as they say in the theatre. Could I ask witnesses and Members to mute their microphones if they are not speaking? Not Dawn Butler, who has the next question.

Q331 Dawn Butler: I thank all the professors for coming today and giving evidence. I almost feel that I want to apologise to you. You seem to be saying what we have heard time and time again, but it has not been acted on. If we had got the test, track, trace and isolate system right in the beginning, we would be in a better position now. WHO, four days after we stopped mass testing in the UK, gave us the very clear message, "Test, test, test."

We know that clear messaging is vital and important for saving lives, especially on compliance and at the beginning of an epidemic. What could we have learnt in the summer lockdown to help us with clear messaging on the test, trace and isolate system?

Professor Dame Anne Johnson: The level of public trust and communication with the public and listening to public voices is incredibly important. In our Academy of Medical Sciences report, "Preparing for a challenging winter", we emphasised the importance of stepping up testing capability. It is very important that, when people have symptoms, they know whether or not they are infected; it has such a big effect on their lives, and whether or not they can go to work and so on.

The point we made was that it is really important to have clear and consistent messaging, such as we have seen in Sweden throughout the pandemic, as Chris said. That message was very clear in our report, alongside the importance of working particularly with local communities. We have a very diverse community. We need to be working with different languages, different faith groups, different ethnic groups and different communities to get messages across. We know from surveys that a lot of people are quite confused about what they should or should not be doing,



even if they wish to comply. They may not be clear about what is meant by self-isolation and what they need to do to look after themselves, look after their family and prevent onward transmission.

Q332 Dawn Butler: Professor Harrison, what message would you like the Government now to portray going forward?

Professor Harrison: In messages to the population as a whole, in some of the high-risk, high-transmission areas we need a very clear set of unambiguous guidance. One of the problems over the summer, in terms of the previous question you asked, was that, in areas of high transmission, we had multiple escalating control measures that were changed with rapid frequency. That contributed to the confusion that people felt, because they were not sure which point they were at in the escalating controls.

Going into the winter, if we are expecting, as we are, high rates in a number of areas, one of the key messages is that we need a simple set of guidelines for key areas that, for structural, demographic and economic reasons, will have continued high transmission. Those areas need very clear and simple messages about control. They need resources to be allocated to the local authority, both to develop the test and trace system on a local level and to support those who are self-isolating. One of the reasons for very low compliance in self-isolation is not behavioural disinclination, but not being able to afford to do it for many communities.

Professor Sir Chris Ham: I agree with what Dominic has just said. As well as the messages being clear and consistent, it is important to understand who the messengers should be. Certainly, what I have learnt from my work in the NHS and with local government colleagues is that we need credible local leaders. They can be elected members of councils, members of faith groups or community groups, or respected members of the health and care community. We could also have people of different age groups; getting messages to younger people is going to be critically important. That can be through a variety of channels, but you need role models from your communities who are prepared to work with you. This is a collective responsibility, led by local government but embracing all of those assets. If we can do that well, as we are in some places, we will be in a great position.

Q333 Barbara Keeley: Professor Harrison, we know that local health protection teams are reaching far higher proportions of contacts than the national system. Could you tell us why you know that those teams are performing so much better, given that they lack the same scale of resources? We may have touched on some of the ideas already, but have you picked up lessons that we could now be applying across the country?

Professor Harrison: Yes. Blackburn with Darwen was one of the first local authorities after Leicester to do what is called local contact tracing, although in effect we are not doing local contact tracing; we are at the moment doing local case tracing. That is following up cases that are



confirmed but which the national system has not been able to contact to even get their contacts. We have been doing that since 29 July. We get the cases that the national system has not been able to contact in 24 hours, and we follow them up locally. Up to 3 November, 1,186 cases have been devolved to us—the local team—and we have a success rate of 89%. That is 89% of the ones who were not picking up the phone to the national system.

Our experience over the last few months has been that the key reasons why we are getting a higher rate are, first, that people appreciate getting contacted by a local telephone number or by the local authority. Our first action is to text them saying, “We, your council, need to speak to you.” They respond to that. Our services are run by people who have worked in neighbourhoods and communities and know the people they are contacting. They often know the streets because they have worked there.

We have pulled people out of our core services to run the local contact or case tracing service. They have come largely from our local wellbeing service run by our leisure services, and our neighbourhood and community services. They know their local communities really well, particularly the BAME communities where we have much higher risk. The services are open from 8 until 8 in the week and from 10 until 1 at weekends. When they speak to somebody it is a local voice, speaking to them about their community.

The other thing it helps us with is giving us local insight. When you make a contact, you go through the script that the national team uses and try to elicit the contacts. We then feed those contacts back into the national system. As part of that conversation, people tell us things about where they think they got it, what they think the risks are and the difficulties they have. Of all the things we contribute by doing that locally, it is not just taking their details and feeding them into a computer programme; we offer them local support on debt counselling, connect them to the hub and offer them support to self-isolate. Now, of course, we have self-isolation payments so we can steer people from initial contact through to the self-isolation payment system.

We offer a much more wrap-around service, and people trust us more. The local insight we get and the local relationship we are able to form through local contact tracing seems to be heard in the community. People are much more willing to talk to the local authority and welcome being able to access our services. It is a much more localised and relevant function. It has enabled us to understand much more what the nature of our problem is.

Q334 Barbara Keeley: Congratulations to your local team on those excellent results. Perhaps you could tell us two things. First, how many people have you been deploying in that role? Obviously, we have the national system handling the bulk, though perhaps not handling it particularly well. Do you think that if, in Blackburn with Darwen, you were given your



proportion of the national contact tracing budget, you could scale up your contact tracing service quickly to carry on contacting 80% or 90% of the contacts? What would you need to achieve that level? If there were a shift of the national resource to local, and you got your share of the resources, could you do that? Can you give us an idea of how many people are currently working on it?

Professor Harrison: On average, we are being referred about 31 cases a day, although it can be a bit erratic. Sometimes the numbers are much lower and sometimes much higher. We have had to train the people we have pulled out of their day job. We have done that with Public Health England. We have a rolling number of staff who are trained, and they come in to meet demand as we get different numbers referred. I think we have about 20 people trained and able to come in at different times, pulled in from their day job.

We did a back-of-the-envelope calculation for Lancashire as a whole, as to how many staff we would get if the national numbers from the national test and trace system were allocated to us. We think it is about 600 or 700. That is for the whole of Lancashire. For Blackburn with Darwen, of course, the numbers would be much less, around 100 and something. It would make a transformational difference if we had that resource for staff at local level. It would need to be resource to employ local people to do it, because that is part of the value.

We have discussed it across Lancashire, and we think it might work better with the mainstream calls done at a Lancashire level and the more complex cases done at very local level. At the moment, our discussions with the national system are going well. We are trying to get a blended system, with the national system contacting cases and completing them where they are able to, but trying to get more and more capacity at local level.

One of the problems we have is that in wealthier areas where you do not have the challenge of, for instance, high ethnicity cases, the national test and trace system seems to be performing reasonably well. The challenge comes where there are lower-income communities, high BAME populations and more social and economic challenges. There, the national test and trace system and the contact tracing rates are dramatically lower—in the early 50 per cents. That risk is multiple for my community. The national test and trace system performance, with those numbers, is, I think, partly what caused the continued spread across our borough. It was the failure to work effectively, even when we had low numbers in the summer. In the summer, the number of contacts being completed by the national system for Blackburn with Darwen was in the early 50 per cents. That was a contributor to continued transmission.

Barbara Keeley: That is really important. Thank you for your answer.

Q335 **Carol Monaghan:** I thank the witnesses for the evidence they have given this morning. It has been really interesting to listen to it.



A recent YouGov piece of research was published that said self-isolation and adherence to self-isolation among people with potential Covid symptoms could be as low as 18%. Where are we going wrong, and what can we do to improve those figures?

Professor Harrison: Our experience of talking to people who have been asked to self-isolate is that the economic challenges are probably one of the main barriers to compliance. If you are on a zero-hours contract or you are a taxi driver who earns their money by being out, even the self-isolation payment is probably not going to cover the income you would have got. That is the first problem.

The second problem is that people are reluctant to give their full list of contacts. They do not want to cause the rest of their family, where perhaps there is one low-wage income earner in the household, to be triggered into self-isolation and to lose their capacity to feed their family. We have seen for instance over the summer—a little bit less recently—that the national test and trace system was only getting three contacts per case interviewed, which seems improbable during the summer. We feel that people are under-reporting the number of contacts they probably had, because they are protecting their family members and friends from being identified and asked to self-isolate as close contacts.

I think the answer is a stronger and more committed system of support for those self-isolating, such as other countries have had. We now have a payment for those self-isolating, which is £500. That is very welcome and is being highly utilised. It has made a difference.

Q336 **Carol Monaghan:** If we are talking about countries that have better financial support in place, somewhere like South Korea has been extremely successful in its contact tracing. Is that because they have better financial support or are there societal reasons as well that might make people in South Korea more likely to follow the rules and be more compliant?

Professor Harrison: That is a good question. I think there are cultural factors at play. For most communities and individuals, there is general willingness to comply with self-isolation, but there is a different level of capacity to do so across different communities. That is why we see much higher rates among middle-class professional workers who can work from home, or big City workers in higher-skilled jobs who can work from home. They will continue to get their normal pay while they are self-isolating. That is a very different prospect from somebody who is living hand to mouth on a basic income; if they self-isolate, the whole household capacity to pay rent and have food is diminished. We are not talking about the same challenges across the whole community.

Q337 **Carol Monaghan:** Other things we have seen in east Asian countries are, for example, that they have moved positive cases, or contacts of positive cases, into, perhaps, enforced self-isolation in hotels. Is that something we should be looking at more carefully?



Professor Harrison: One of our challenges in high transmission areas, particularly where there are high south Asian or BAME communities, is that as soon as you are a confirmed case and you have to go home and self-isolate in a pre-1919 terraced house with a large multigenerational family, it is almost impossible not to infect the rest of your family, realistically. Of course, we are giving as much guidance and support as we can to people who are self-isolating as a confirmed case in a small terraced house that is multigenerational, but the ask for them is very different from the ask for the average member of the population.

At some point, we may want to consider putting people up in hotels as soon as they are a confirmed case, rather than sending them back to infect their family. It is not just south Asian families that are being infected by the index case, the first case. It is a risk that we have not really grappled with. In Blackburn with Darwen, we looked at what percentage of confirmed cases are clustering in households and in lower super-output areas, which are about 1,500 in population, a few streets. We see in the patterns of spread by postcode that there is not an even distribution of confirmed cases. Cases are clustering in houses and in lower super-output level areas.

That is due to the fact that an index case may be in the most infected group, which would be 16 to 29-year-olds who may well be asymptomatic. They are becoming infected and unknowingly taking the virus home to the family. The first person to show symptoms is an older member of the household. The whole household goes to get tested, and then we see household clusters. We are also seeing clusters of households in lower super-output areas. That distribution is very uneven across the community.

Some measure of further control for the index case—the first person infected in a household—would make a big difference. In south-east Asia, their way of dealing with that has been to say, “As soon as you are confirmed, we will put you up in a hotel. You do not go back to your family.”

Q338 **Neale Hanvey:** Thank you to all the witnesses today for their excellent testimony. I would like to pick up on one point from Professor Ham. You commented that movement on testing over the summer was too slow, and I would like to ask specifically about that. Were there any specific impediments, beyond having the will, that prevented a significant expansion of testing capacity at that time?

Professor Sir Chris Ham: If you look at what has happened on testing, the Government are very much focused on building capacity in the commercial Lighthouse laboratories. They did that quickly and successfully until the summer. They expanded capacity to about 250,000 a week, but we discovered early in September, when the schools went back, when people went back to work and when people came back from holiday, that there was growing demand for tests and there were bottlenecks, which were well publicised at the time.



Thankfully, we have overcome that, and we are in a much better position now. If more had been done during the summer months when case rates were low and we had that opportunity—for example, we could have made greater use of university laboratories and NHS laboratories—we might have been able to add capacity to avoid the bottlenecks that occurred. Paul Nurse has been very vocal over a long period of time about drawing in the expertise of research institutes like the Crick. With the new capacity coming on stream from the Lighthouse labs that have been commissioned, it looks as if we have the ability to do more tests than there seems to be demand for. The worry now is why there is not more demand from the community, given the increasing infection rates. That is something that I am sure the Committee will want to explore.

Chair: Thank you very much indeed. I thank our three witnesses this morning for their evidence. I would like to say, through Dominic Harrison, to your fellow directors of public health and their teams, and local Public Health England teams across the country, that we applaud and recognise the very hard and important work you are doing. You were not speaking on their behalf today, but we are grateful to you for giving us an insight into the work that they do locally.

I hand over to Jeremy Hunt to chair the next session and introduce the next set of witnesses.

Examination of witnesses

Witnesses: Professor Sir John Bell, Professor Martin and Professor Krause.

Jeremy Hunt took the Chair.

Q339 **Chair:** With this panel, we are going to dive a bit more deeply into issues around testing. We are delighted to welcome Professor Sir John Bell, who is regius chair of medicine at the University of Oxford; Professor Jo Martin, president of the Royal College of Pathologists; and Dr Gérard Krause, who is the director of the German Institute for Infectious Disease Epidemiology. Thank you all very much for joining us today.

Sir John is a regular visitor to both the Science and Technology Committee and the Health and Social Care Committee. Thank you for joining us. Before we look at testing, can I ask you to comment briefly on something you said yesterday about the Pfizer vaccine announcement, namely that we could be back to normal by the spring? Was that your natural Canadian optimism, or do you have more scientific grounds for such confidence?

Professor Sir John Bell: I think the journey to a vaccine has been a long journey. There is a risk that people will underestimate the importance of the announcement yesterday. The big challenge was to find a vaccine that actually had efficacy against the virus. There are many pathogens for which we have looked for decades and not found a vaccine that works, including, incidentally, respiratory syncytial virus and upper respiratory virus; it took us 35 years to get a vaccine that potentially



HOUSE OF COMMONS

works. We do not have a vaccine for malaria or HIV. Everybody has taken it as a given that somebody will produce a vaccine. That is not true. Yesterday, we broke through that, and that is a massive step forward.

Are there some more things we need to do? We have to get regulatory approval. We need more material manufactured. We have to get it distributed. It will be hard to distribute because it has to be distributed at minus 80, which will be complicated. It signals that many of the other vaccines that have the same immunogenicity are also likely to be efficacious. I would not be surprised if we hit the new year with two or three vaccines, all of which could be distributed. That is why I am quite optimistic of getting enough vaccinations done in the first quarter of next year that, by spring, things will start to look much more normal than they do now.

Q340 **Chair:** If I was to treat you as a lawyer, and say what are our percentage chances in this situation of getting to Easter and having vaccinated the most vulnerable parts of our population so that post Easter we could think about resuming normality, what sort of chance do you think we have?

Professor Sir John Bell: I think we have a 70% to 80% chance of doing that, provided they do not screw up the distribution of the vaccine. That is not my job. Provided they don't screw that up, it will all be fine.

Q341 **Chair:** Thank you. That is very good news.

Professor Whitty told the Science and Technology Committee that test and trace is more effective at lower levels of transmission. Putting the discussions about the vaccine on one side for the moment, do you think we have got to levels of transmission in the community now where we should look at adopting population-level testing? Do we have technologies now that make that possible?

Professor Sir John Bell: As you know, since July, I have been busy trying to work through whether there are methodologies you could distribute widely in the community, where the turnaround times are short and repeat testing is a possibility, where they are cheap and relatively easy to use, and have both specificity and sensitivity that make them usable. To date, we have found about six lateral flow tests out of about 50 we have looked at that fulfil those requirements. The validation of those will be published tomorrow. The data looks much better than I personally expected it to look. They are pretty good tests. As you know, the work we are doing in Liverpool at the moment is a first crack at seeing whether we can get population-wide testing. I think that is now a distinct possibility.

Q342 **Chair:** Can I bring in Professor Martin on that point? Do you think we are at the point where we could seriously look at population-level testing?

Professor Martin: Yes, I agree with Professor Bell on that. We have expanded capacity substantially. With new technologies coming on, I



think that is a possibility. The caveat, again, is that it is not easy. Consumable supplies, equipment supplies, getting personnel on the ground, getting the distribution sorted and getting the IT that backs it up, particularly to get our results back to our colleagues in public health, will be absolutely essential. We need systems that work end to end. It is not as simple as just having a test and pressing a button. You have to put it in the community context.

Q343 Chair: In the earlier session, Professor Ham referred to Sir Paul Nurse, who famously commented that we should think about the little ships—in other words, the smaller laboratories, university laboratories and hospital laboratories—when we were ramping up our testing capacity over the spring and summer. We have now obviously got to substantial testing capacity, but do you think it would have been an easier journey if we had followed Sir Paul Nurse’s advice?

Professor Martin: Sir Paul Nurse and the Crick worked very closely with NHS laboratories—HSL—to get testing up and running at the Crick. I think that is one very important thing that the Royal College of Pathologists has emphasised throughout. We published a very helpful testing strategy in June, re-emphasising the need to keep things joined up. If you have lots of little ships, that is fine, but they need to be co-ordinated, and you need data flows.

At the beginning of the pandemic, the NHS labs were desperate to ramp up testing. They all wanted to ramp up levels of testing, but at the time we had very bad constraints. We had very severe constraints in equipment and consumables. Bear in mind that those were all new tests coming on stream at the beginning of the pandemic. Effectively, there was not enough to go round. It was global; it was not just the UK. There was a global shortage of the consumables. We still do not have as much as we would like. There are big international suppliers that have capped the UK supply of consumables, but they have done an enormous amount with it.

Capacity within the NHS has ramped up hugely. There are some very good university NHS partnerships working very well. As we go forward, one of the important things will be to have a sustainable legacy. Standing up and standing down labs is quite disruptive in the long term. Infrastructure—

Q344 Chair: Sorry. If I could press you a bit, I think you are saying that it was not strategically wrong to set up the Lighthouse laboratories if you want to process huge volumes of tests. Is that right?

Professor Martin: That is right. Personally, I would have liked to see more awareness of the end-to-end process. You talked about high-scale laboratories. The pathology laboratories for the health services process 1.1 billion tests a year. The NHS does high throughput testing. We do that every year, so we are good at high throughput testing, but with an end to end process. Setting up the Lighthouses with an independent IT



system is probably something that we have learnt from. That has changed; data is now flowing much better from the Lighthouses through to regional public health and to local public health and primary care, where you need it.

Q345 Barbara Keeley: This is a question for Professor Sir John Bell and Professor Jo Martin. Going back to the trial of mass testing that we are seeing in the city of Liverpool, what do you see as the main advantages and challenges of using rapid point of care tests on a mass scale? Perhaps you could mention whether there are concerns about the accuracy of those rapid tests compared to the RT-PCR testing.

Professor Sir John Bell: The advantages of the tests are, first, that the turnaround time is pretty fast, so you do not have to wait a day or two to get the result. That, of course, has immediate advantages if you find positives, because they can be quarantined immediately. That is a huge advantage. They are also relatively cheap, and you can use them sequentially very readily. You can set up a system of testing where everybody gets tested once a week or twice a week, and you can rather more intensively track contacts to see if they are becoming infected or not. There are lots of advantages.

When I started to look at the validation of the tests, I was very sceptical about whether they would have the kind of accuracy that you need. As I say, the data will all be published tomorrow, but the validation data we have done, at least on those six tests, is very impressive indeed. They are not quantitative PCR tests. Everybody needs to understand that. There are advantages to that because, of course, people carry RNA in their throats a long time after they have stopped being infectious. These identify the people with high live virus in their nose and throat. In doing so, they catch the people who are most likely to spread the virus to other people.

I have to say that they will not catch everybody. That is a really important no. They will not catch everybody, but you can look at it this way: everybody they catch will be somebody, particularly in the asymptomatics, who you would never catch with the previous system. Most of those people are not getting tested, so everybody you catch is a win. As a result, I think we are making substantial inroads into identifying people who are asymptomatic and are infectious and transmitting the disease, and who you can actually quarantine.

Q346 Barbara Keeley: If somebody had symptoms and took one of the rapid tests, would getting a negative back be enough for them to stop self-isolating, or would you still have to say to them, "You must serve out the 10 or 14 days of your self-isolation"?

Professor Sir John Bell: The ONS data is very clear; 95% of people with symptoms do not have the disease. Most people with symptoms are hypochondriacs. That is a clear association. It came out of the ONS survey. There is no ambiguity about it. If you use symptoms as the only



way of identifying people, you will be locking down a lot of people who should not be locked down.

Q347 **Barbara Keeley:** Professor Martin, what would you say are the advantages and challenges of rapid tests?

Professor Martin: Testing and the methodologies used, as Professor Bell says, need to be in context. These are not tests that we would necessarily use for diagnosis of somebody coming into an A&E department. We would use a different technology, probably PCR based at the moment, until we have better sensitivity and specificity tests coming on board. In terms of ease of use, which broadens capabilities, particularly around public health control, I think they are very promising. We will have to see how they do in reality.

Very importantly, particularly if we are going to use them for asymptomatic staff testing, we need to make sure that people do not stop using PPE and do not stop social distancing. The messaging around it has to be absolutely right. All our pathology teams and our amazing infection control teams know very well that this is part of a control strategy. It is a risk reduction, not a risk removal strategy.

Q348 **Barbara Keeley:** The notion that we could have rapid testing used and then people could be admitted to theatres and other crowd situations is not where we are at. People would still have to observe social distancing.

Professor Sir John Bell: Yes. We have to be careful about opening up high-risk environments such as football matches, cinemas and all that stuff. We are some distance from that at the moment. We have to go more carefully. They are being used in universities and schools, and there is city-wide testing in Liverpool, which is not intended to free people to go out. We are under a lockdown, so it is quite a good set of circumstances to test the test.

Q349 **Barbara Keeley:** The messaging is important so that we do not get into seeing rapid tests as a way of freeing people to go into crowds and so on.

Professor Sir John Bell: Exactly.

Q350 **Dr Evans:** Building on what Sir John said, my question is to Professor Martin regarding understanding PCR and lessons learned. In simple terms, my understanding of PCR is that with a reverse transcription you pick up the RNA and multiply it over and over. You have cypher limits set that tell you whether or not you have had the test. Could you give me what you believe the false positives and the false negatives are around that, and the values you have seen for that test?

Professor Martin: The false positives and false negatives operate at about a level of 97%, and it depends very much on the circumstances. The implications of a false negative and a false positive are different in different circumstances. At high population levels, the false positive rate drops. At low population levels, you have to worry much more about the



false positives. The impact of getting a test result that is wrong is different in different circumstances. That is really important to take into account when looking at that. You do not want false negatives going into an accident and emergency department. You do not want somebody who is positive but testing negative going on to a ward where they might infect people, or the other way round. We do not want to give people the virus in a care setting that has had a false positive or a false negative result.

Q351 Dr Evans: Picking that up, there is a debate raging on the level of cycles that should be used for amplification and where it comes. I would be grateful if you could set the record straight from the Royal College of Pathologists. Every year, the tests you do, be it a test for haemoglobin, have a wide margin depending on who is doing it. Would you be able to comment on that and set the record straight?

Professor Martin: Public Health England has a cycle threshold for PCR; 35, and that is absolutely fine. There is lots of debate about the 30 to 36 window. Not all technologies are absolutely comparable, so some of the rapid PCR tests, which are very effective, have Cq times and not Ct, so you have to join them all up.

Q352 Dr Evans: Are you happy with that threshold? Do you think it is a sensible threshold set?

Professor Martin: We are learning more about it the whole time. It also depends on whether you have the capacity to double-test. Some tests are against one gene target and some tests are against two. If you have a low-level positive on one gene target, but it is negative on the other one, you are probably happy to call it a negative in most circumstances. If it comes up positive on both, you would call it a positive. If you repeat it using a different technology, that is a way of reassuring yourself. This is all under very active discussion as we get more and more data. I pay enormous tribute to our clinical scientists and our laboratory scientists who are working with shifting data and new technology the whole time.

Q353 Dr Evans: I am really pleased that you said that. I am very grateful to them too. Pulling those together—the false positives and the false negatives in the cycle threshold—you turn that into surveillance. The Health Select Committee was very keen to have mass testing in the NHS. It is now being talked about. In the lessons learnt, do you think that the PCR could have been brought in for mass testing? What would the implications have been for a workforce having false negatives or false positives, as you rightly called out? We have not heard the reasons why that was not done.

Professor Martin: Right from the beginning, we have been very constrained by equipment and supplies. I think virtually every lab in the country would have said, "Yes, we can do more with more kit and more supplies." As I said, globally it has been problematic. Most laboratories have had to change the technologies that they have been using, certainly



across the health services, three or four times during this period; they have not been able to use particular platforms because they have not had the consumables for them. The Mayo, apparently, has 20 different platforms, all so that they can maintain a service in the face of different shortages.

That has been happening across the UK. A lab that had a six-hour turnaround on a Thermo Fisher platform at the beginning could not get the supplies, so they were not able to run it. The Royal College of Pathologists was very clear. We wanted to do lots more testing. We wanted to do staff testing and roll it out as much as we could, but the supply constraint has been a real problem.

Q354 Dr Evans: Going forward for mass surveillance using PCR, what are your concerns with regard to virus shedding, people still having RNA in their system and mass positive tests? The concern is that if people who are repeatedly tested, who may have tested positive in March and had symptoms at that time, are working on the frontline, you could lose your surgical team very quickly for something that does not need to be done. Could you comment on that aspect?

Professor Martin: We understand more about long-term shedding, and not repeating tests. If you have a confirmed positive, don't repeat test them. That is very important. We know that shedding can go on for a very long time. Shedding for live virus transmission is very low. Hong Kong has been using a cycle threshold of 30 and combining it with serology. They have been using IgG and IgM serology in some places and classifying people as non-infectious once they have a low viral threshold and positive appropriate serology in a decent timeframe.

Q355 Dr Evans: Is that something you would advocate for the UK to take on, if we are using mass, to align it with IgM and IgG?

Professor Martin: I have a lot of incredibly skilled immunologist and virology colleagues. As we look at the data coming from the UK, it will be important for them to opine on that. It is not for me.

Q356 Dr Evans: When this is all over and we have created a huge industry off the back of about six weeks, what do you want to see that industry used for in the future?

Professor Martin: This is not my first pandemic—there was HIV—and it will not be our last. We hope that it will not be as bad, but we will always need a stand-up capacity for major incidents and major disease outbreaks. We have public health surveillance for that. There will be a legacy from this.

One of the most important legacies of the whole system we have created, which I think has gone largely unnoticed, has been the IT links we have created between the health service and public health laboratories. Before this, we had several labs but not large scale. Over the course of a very few weeks early in the pandemic, we linked up 96 health service and



HOUSE OF COMMONS

public health laboratories with a common messaging system for interoperability. We used the national pathology exchange system. That is a real, long-term investment in UK health infrastructure and will be a lasting legacy. Obviously, more IT investment would be very good, but I pay tribute to NHSX, to Simon Eccles and the NHSX team for working with the NPEX and all the labs on that.

Chair: Thank you very much, Professor Martin. I want to make sure that we have time for Doctor Krause, who has very important evidence to give.

Q357 **Greg Clark:** I have a question about isolation, but I want to pick up a particular point that Sir John Bell made to Jeremy. First of all, we should put on record our thanks to you, and the vaccine taskforce, for the progress we have made in securing supplies of these vaccines. It is a good example of anticipation that both of our Committees commended. I know that you have been particularly vigorous in that.

You said to the Chair that it is all pretty good news and green lights ahead, but it depends on the distribution of vaccines. Who is responsible for distributing the vaccines?

Professor Sir John Bell: My understanding is that it falls to the Department of Health and Social Care, and that they would in turn, I suspect, rely on NHS functions to do that. If we get two or three vaccines, as I suspect we will by the new year, they will have different routes of distribution, in my view. Some of them you would administer just like the flu vaccine. The Pfizer vaccine needs a cold chain at minus 80 to the bedside. Minus 80 is liquid nitrogen, so the idea that that will be done through local GPs sounds a bit unlikely to me. I think they are going to have to have a bespoke solution for the Pfizer vaccine, which is absolutely worth it but they will have to think quite hard about how they do it.

Q358 **Greg Clark:** Do you have any visibility as to whether that bespoke solution has been established in anticipation of a rapid roll-out?

Professor Sir John Bell: I don't have any visibility of the solution. I have visibility of the discussion about what the solution might be. That is absolutely going on at the moment. We have been aware that there was potentially a constraint on distribution for RNA vaccines, so there has been some previous thought about what that might look like. Now that it is game on, we have to get it in place so that we do not get delayed by distribution when the thing gets approved.

Q359 **Greg Clark:** When do we need to get it in place? In the next two or three weeks?

Professor Sir John Bell: I think so, yes. To be clear, the safety data on the Pfizer vaccine is still to come in. I do not think there are any red flags, but they will have to assemble it. Then it will have to go to regulators. I am not expecting regulatory approval in the FDA or European regulators for about three weeks, I suspect, but once that has



HOUSE OF COMMONS

happened we need to be ready to go. We are talking about mid-December. That is when I think we should be ready to administer a vaccine.

Q360 **Greg Clark:** Thank you, John. I saw you listening very intently to Dominic Harrison, the director of public health, when he said that people do not want to give the names of their contacts because they do not want them to have to suffer isolation, as it were, and that only about three names were being given. Do you think it is reasonable to ask people without symptoms who have been in contact with an infected person to isolate for 14 days?

Professor Sir John Bell: The data on that is pretty clear. Only very few of those people are actually infected. In order to prevent a single transmission, you have to isolate 70 of those people for one day. It is massively ineffective. The trouble is that people out there know it is massively ineffective. That is why they hate it. When you do whole lockdowns, it is 1,000 people a day to stop one transmission. That is why people do not like that either.

What we have to do, in my view, is move to a setting where that ratio is much improved. If you quarantine people who have symptoms and have a positive PCR, you only have to have five of those people quarantined for a day to stop one transmission. That is massively effective. Similarly, if you take people who are mass tested with a lateral flow test, the number is probably less than five. We have to start to get a bit more pragmatic about efficient ways of reducing transmission. At the moment, my view is that contact tracing is not very efficient.

Q361 **Greg Clark:** In other words, we should test people who have been caused to isolate because they have been in contact, and we should release them if they test negative.

Professor Sir John Bell: Yes, and the methodology is now there. You could lateral flow test people every other day if they were a contact. If they do not turn positive, they do not have the disease and off they go. You could do that without having to quarantine them. They could do that in real life, and it would all be fine. As a result, I think you would find that compliance with the contact tracing regime would go up enormously.

There is a big problem with our current philosophy of contact tracing and quarantining. It is all based around a big stick that beats people up. I do not think we are looking at it as a mechanism to enable people to do things that they would not otherwise do. An enablement strategy is the right way to get buy-in. For example, we are now in a world of vaccines. When we give somebody a vaccine, they are going to have to have freedom to operate because they are protected against the virus. We are going to have to give them a ticket that says, "If you want to go to the cinema, you can go to the cinema." We will have to get used to the fact that we are going to enable people who are protected from the virus.



HOUSE OF COMMONS

If you have had the virus and you are swab positive by PCR, for example, you are protected for at least 90 days, and probably for more. You cannot keep saying to those people, "Well, we will lock you up for two weeks and then you go back to the normal routine." You have to say to them, "You will be okay. You can go on the trains, you can go to the cinema or the football match." People are going to be vaccinated. I can tell you that if I get two shots of the vaccine and people say, "No, you still can't go to the football match," I am not going to be very happy about it.

We are now living in a world where we need to open up society again, and we need a structure to do that. At the moment, we do not have that structure because the whole philosophy is, "Let's beat them up with a stick," rather than, "Let's give them a carrot to do things properly."

Q362 **Greg Clark:** We need to change that philosophy, and, as you have made clear in your evidence and before, we now have testing capacity—both PCR and lateral flow tests—so why aren't we doing it?

Professor Sir John Bell: You might well ask. Those conversations are going on at the moment. They are incredibly urgent. Let me tell you that our field studies to date on lateral flow tests have been very interesting. We go to universities where the kids have had a very bad time. Only 30% of the kids are interested in having a test. The reason they are not interested in having a test is not only that they do not want to be locked up again themselves, but they do not want all their mates to be locked up. That is a massive disincentive for people participating in a mass testing programme.

We have to flip that around, otherwise nobody is going to take the test and that is the end of the mass testing programme. It has to be about enablement. You have to give people something they would not otherwise have and which they want to have. Then you will have queues of people trying to get tested, and it will all be fine.

There is a real problem. It has come out loud and clear in schools and in universities, and it is beginning to come out in Liverpool. I cannot share that data with you yet, but it is starting to be clear that it is a problem in Liverpool as well.

Q363 **Greg Clark:** Your view is that we should be testing people who have been asked to isolate now and releasing them if they test negative.

Professor Sir John Bell: Yes. My view is that you test people, and if they have a positive result you ask them to quarantine for two weeks, and you ensure that they quarantine for two weeks. If they behave themselves and they quarantine for two weeks, you give them a freedom pass for three months. You say, "You've had the disease. You can go and do anything you want for three months. It's fine."

If they test negative, they can have a couple of days of freedom because you know that they are not infected. If they are a contact, you test them every other day, but leave them to go about their business in the real



world. There are advantages for everybody. The negatives do better, the positives do better, and people will want to be tested because it is an opportunity to get back to normal life. It is not that complicated, but we need to get on with it.

Q364 **Chair:** Thank you very much. Last but not least, I want to bring in Dr Gérard Krause, who is the director of the German Institute for Infectious Disease Epidemiology. He is joining us today from Germany. Thank you for being so patient, Dr Krause.

Germany has had one of the most admired responses to coronavirus in Europe. Why do you think that Germany has been so much more successful at containing the virus and keeping death rates down compared with other big European countries?

Professor Doctor Gérard Krause: To be honest, I do not know. I would be careful of the assessment. I always say that we should make the assessment in two years or so and see the overall balance, and then come back to the question. There are some indications. One is definitely that the Government, from the very first moment, acknowledged the pandemic to be a pandemic and made clear the serious risks associated with it. A second thing is that the German healthcare system is very much privatised and decentralised. That enabled the test capacity to be upscaled at a velocity that was not comparable in any other country.

We happen to have one of the most renowned coronavirus researchers in our country, Christian Drosten. He developed a test kit and made it available very quickly, so at no point was there the notion of a centralised test capacity that would claim to be the only one to know how to run the test. I think all the experts here would agree that running a PCR is not magic. Having a large number of highly automatised and highly capacitated private laboratories and allowing them to run the tests—connected with a lot of financial incentives because each of those tests is paid for by the health security system, so it is almost like a money-printing machine—has allowed for testing to be available and to be scaled up very rapidly, very soon.

I am not a promoter of an unfocused, generalised testing strategy. Even under those conditions, you still get limitations, and test results are not available as soon as you would want them to be. I would promote introducing some sort of prioritisation. The Robert Koch Institute—the national public health institute in Germany—is now doing that. There was some delay, but it is now focusing testing on those whose need is most urgent. That would be people who have symptoms and, among those who have symptoms, people with defined risk factors for a severe outcome. I think that is still important.

On the other hand, from the very beginning, contact tracing was one of the very strong strategies in Germany. It was from the very beginning the task of local health departments. It was decentralised. It caused a lot of problems because I must admit that local health departments in



HOUSE OF COMMONS

Germany have, for decades, been underfinanced and understaffed. Nevertheless, being decentralised still allowed them to do a decent job and to maintain the strategy. It was maintained throughout, so at no point was contact tracing stopped or deemed unnecessary.

I do not want to describe it as if everything was perfect. The German Government are now running a strategy that after a certain number of cases per 100,000 inhabitants per seven days a local health department is no longer able to do contact tracing, and therefore we need to engage and invite community limitations and business limitations, generally referred to as shutdown.

I personally do not agree with that approach. How efficient and productive a health department is can be influenced by many factors, including, as a previous speaker said, many aspects of focusing and prioritisation of contact tracing. There is not necessarily a need to maintain contact tracing for everyone and every contact person, but there are multiple ways to focus. You can shorten the quarantine period. You can shorten the exposure interval. You can focus on the contact person's risk factors and so on and so forth, not to mention digitalisation of those procedures.

Q365 **Chair:** In Germany, how do you incentivise compliance when someone is asked to isolate because they have been close to someone who tested positive? We have been hearing this morning how difficult it is to persuade people when they might lose money or whatever. How do you make that happen in Germany?

Professor Doctor Gérard Krause: The basic infectious disease control law contains a paragraph that provides that it is the responsibility of the local health service to compensate the person in quarantine for the monetary loss of not having been able to go to work, but most of the time that is not claimed or used. The reason is that, at least for public services—a big part of Germany's business is in public services—there is no immediate financial risk for the individual under quarantine. It is of course a completely different story for many small private businesses, who are now going bankrupt. Unemployment is a risk. There is also a certain tool in the German economy called "short work", which reduces the work time for the individual while maintaining their salary, paid by the Government. People do not necessarily need to be fired because of economic risk.

There are obviously some limitations to that, but my feeling is that there is an over-incentivisation of quarantine. Many people seem to like to go into quarantine, or go into quarantine voluntarily, because there are some positive side-effects. In medicine, we call it a positive disease effect.

Q366 **Chair:** Do you know what percentage compliance rates you are getting across Germany?



Professor Doctor Gérard Krause: No, I cannot give that number.

Q367 **Dean Russell:** Dr Krause, thank you for your time. I was fascinated to hear your evidence just now. Often, from a UK-centric point of view, when we talk about what the successes are in other countries, everything sounds like it is running perfectly. It was fascinating to hear your views on the challenges. I am interested in those challenges a bit more.

In Germany, you seemed to be way ahead of the curve in the early stages. I am interested to know why you think you were so far ahead at the start, and where Germany is now compared with the UK in terms of testing numbers and from a general public perception of how the Government are doing. Every country has its challenges. I would be interested to see whether ours are similar to yours.

Professor Doctor Gérard Krause: I have difficulties in making those kinds of comparisons because I do not know enough about the situation in other countries.

One of the reasons why it may have been perceived that we were ahead of the curve for some time is that the surveillance system in Germany is generally quite good in international comparisons. It needs a lot of improvement and we are not happy with it as it is, but compared with many other countries—I don't want to name a single one—it is effective and timely. To a large extent, it is digitalised and that has helped. It was, in fact, the German surveillance system that picked up the outbreaks in Austria that caused a huge wave in Germany. The Austrian outbreak was detected by Germany before the Austrians themselves, and that has to do with the surveillance system. That has helped, but, other than that, I am not sure what made the difference. It was probably because the Government took it very seriously from the beginning. That certainly helped.

Chair: Thank you very much indeed. That is fascinating evidence, and we take away from it your particular belief that having a decentralised system—both for testing and for contact tracing—gave Germany some early advantages. That is very useful evidence for the Committee.

We now have to move on to the third panel, so I conclude by thanking you, Dr Krause, for your evidence this morning. I also thank Professor Martin for joining us from the Royal College of Pathologists and our resident Canadian optimist, Professor Sir John Bell, for joining us as well. Thank you all very much indeed.

Examination of witnesses

Witnesses: Baroness Harding and Dr Hopkins.

Greg Clark took the Chair.

Q368 **Chair:** I am pleased to welcome our final two witnesses this morning. They are Baroness Dido Harding, who is the chair of NHS Test and Trace,



HOUSE OF COMMONS

and Dr Susan Hopkins, who is the chief medical adviser to NHS Test and Trace and deputy director of Public Health England's national infection service. Welcome to you both.

I will start with a question to Dido Harding. We have been talking about contact tracing this morning. Could you tell us the current monthly budget for contact tracing as part of NHS Test and Trace?

Baroness Harding: I do not have the precise monthly figure in my head, Chair, but, as an order of magnitude, 80% of the total test and trace budget is accounted for by testing, and the remaining 20% would be a combination of contact tracing, technology and the central support functions in the overall organisation.

Q369 **Chair:** It is 80% testing and 20% contact tracing and other services.

Baroness Harding: And significant costs in technology and overhead support finance, and so on.

Q370 **Chair:** Within that 20%, what proportion is devoted to the national system and what proportion to the local system of contact tracing?

Baroness Harding: I can write to give you some of the details. I am sorry; I just do not have that split in my head.

Q371 **Chair:** You must have a sense of it. Is it mostly national or mostly local?

Baroness Harding: The reason why I do not have the sense in my head is that the contact tracing approach we have is a genuine team of teams. The test and trace budget that I refer to is the NHS Test and Trace budget, which is separate from the Public Health England budget. The health protection teams in Public Health England are an essential component of our contact tracing, and in turn are separate from the local authority resource. We would need to put the three together for you.

Q372 **Chair:** The crucial policy question in contact tracing is whether it is done nationally or locally. Surely you must have a feel for it, deploying the budget; you are chair of NHS Test and Trace. Do you put most of it into the national effort, as it were, or most of it into the local effort?

Baroness Harding: I don't think either of those is the right approach. I think it is an and, not an either/or. As previous witnesses have said this morning, when I joined Test and Trace at the beginning of May, we were in the midst of standing up a very large national contact tracing effort. Since I joined, we have been looking to integrate that, and work in real partnership with health protection teams and Public Health England and local authorities. It has been moving over time. I am very supportive of the locally led, nationally supported model for contact tracing.

Q373 **Chair:** It is clear that there is a team and they need to work together, but nevertheless you must know that you pay the national team in one way and you reimburse the costs of local authorities and local Public Health England teams through different budgets in other ways. Surely, you must have some visibility as to whether most of the money is going



on the national part of the team or on the local.

Baroness Harding: I simply do not have the numbers in front of me. I am very happy to write and share the detail with you and the Committee. The point I am trying to make is that there are a number of different parts in this team of teams. It is important that we fund all them and not just one of them. I have direct control over part of that but not all of it.

Q374 **Jeremy Hunt:** Thank you for joining us, Baroness Harding and Dr Susan Hopkins. Can I start by recognising the biggest single achievement of the whole test and trace programme, which is to get up to a capacity of 500,000 tests a day? You achieved that last week, which makes it one of the very biggest in Europe as a testing programme.

You will know that one of the main reasons that we invested from the summer on in a big expansion of testing and contact tracing was to try to avoid a second national lockdown. Indeed, in places that have done testing and tracing such as South Korea, Singapore, Taiwan and so on, they have avoided any national lockdowns at all; they did not even have a first one. We have now gone into our second. Why do you think you were not able to stem the tide, even despite the expansion that we had?

Baroness Harding: I will give you an operational overview, and then I will defer to Susan to give you more of the clinical insight. First, I would say that we go into this second lockdown in a very different way from the first lockdown. The rate of infection—the R number—is significantly lower than it was in March. It was over 3 in March, and it is somewhere between 1 and 1.5 today, in different levels across the country. That is in no small part due to the way, as a society, we have changed our behaviours. We are wearing face masks. We are washing our hands. We are keeping a distance in a way that we did not understand in February. It is also because NHS Test and Trace exists.

It is very hard to disaggregate the effect between the two, but there is no doubt that the rate of growth of infection is much slower than it was in the first wave. Our ability to understand where the disease is spreading fast is so much better than it was. We are able, and have been able through the summer and into the autumn, to act more locally and regionally. That was not available to us.

To answer your question directly, I am afraid that much as I would love that testing and tracing on its own would be a silver bullet to holding back the tide of Covid, unfortunately the evidence in the UK and in every other country in Europe is that that is not the case. The way we have to tackle the disease is through a variety of different interventions. We are one of the ways, not the only way. I do not know if Susan can elaborate more on the scientific evidence.

Q375 **Jeremy Hunt:** Dr Hopkins, thank you so much for joining us. I am trying to understand why east Asian countries have been able to avoid not just a second lockdown but even a second wave. Many people would say that test and trace is a key reason why they have been able to do that. Why



haven't we been successful in making that happen here?

Dr Hopkins: There are a couple of elements. The first is that we never got down to the very small numbers that they did. There were single figures in many of the countries and low hundreds in others. Even when we had very low numbers over the summer, there were undetected cases in the population. We increasingly recognised the role of asymptomatic transmission. That has been recognised from the start, but it has been clearly more obvious over the latter few months. We know that now because the ONS survey tells us that when they detect the number of cases they do, by testing a large number of the population, only a third of those cases are detected through the symptomatic testing that we have offered. That means that there is a large number who are either not coming forward for testing or are asymptomatic and potentially transmitting.

We need to constantly reiterate that we should keep our distance and keep our contacts low. That is one of the reasons why discussions such as those in Liverpool, where we are trying to find the undetected cases in the population, will become more important as we try to slow the spread.

Q376 **Jeremy Hunt:** Dido Harding, can I come back to you? I want to explore why that is, and also what Susan Hopkins said about the levels of transmission being so much higher here than they are in some east Asian countries.

To go through a bit of maths, the ONS says that at the moment there are about 52,000 new infections a day. Your own data said there are about 3.4 contacts per infection, although we have heard this morning that it may be higher than that, but that is what your data says. Theoretically, we therefore should be asking 177,000 people every day to quarantine, but of course in practice you do not find out about all those ONS infections. You only find out about just over a third of them. You only reach 60% of the contacts, and only 20% of those actually isolate.

What that means is that instead of the theoretical maximum of 177,000 people in quarantine, which would be the ideal scenario, it is less than 5,000. That is about 3% of the total theoretical maximum. Is that maths right?

Baroness Harding: Let me take you through each piece because I would certainly challenge a couple of the assumptions that you have made, although I would not challenge the overall direction of travel. There is considerable drop-off in any test and trace system. You will not get 100% at each stage.

To take each of them, first, the most challenging estimate is exactly how many people are getting the disease each day. As you say, the central estimate from the ONS is circa 50,000 at the moment, though the one thing we know is that the disease is moving. It is either moving up or down, but let's say it is 50,000. We are finding circa 20,000 to 25,000 positive cases a day, so it is more than your third. Through the course of



HOUSE OF COMMONS

Test and Trace's existence over the last six months it has moved around between 40% and 50%. It is at the higher end of the percentage of positive cases that we find. I think you are completely right, and Susan has just alluded to this: one of the biggest challenges of the disease is hunting out and finding people who have the disease but do not know they have it. I agree on that point.

On the percentage of contacts that we reach, I think your assumption is a bit low. On average, if I take last week, we contacted 77.8% of contacts for whom we had contact details. No system can reach people whose contact details we do not have. Again, that has been reasonably constant through the course of the last five or six months.

To give you a sense of the scale, in the first week of August we reached 18,000 people and asked them to isolate. Last week, we reached 311,000 people. That is a seventeenfold growth since the beginning of August. I take your point that we need to continue improving that percentage, and as we work more and more with local authorities we are seeing it start to grow; as the director of Public Health for Blackburn with Darwen said, they are at 87% through a combination of national and local. None the less, I think you are being slightly pessimistic. I am just trying to unpick the maths a bit.

The system is reaching more, but let me go to your isolation point at the end. There are a number of different surveys. I am pleased that we live in a liberal democracy where it is quite hard to track where people are every day, so all the data we have on compliance with isolation is based on people reporting what they have done. A number of different surveys have been done, and you have quoted probably the most pessimistic.

To quote the chief medical officer, Chris Whitty, I do not think you should think of isolation as a black and white one/zero thing. The evidence we have in Test and Trace is that the majority of people try very hard to comply when they are asked to. When they are not, it is because they might have just popped out to get some fresh air or, if they have gone anywhere, they have gone to buy emergency prescriptions or food that they did not know how else to get.

We have a number of surveys that we are running. This is un-QA-ed data so I hesitate to share it, but some surveys we have run from the end of August through to the middle of September show 54% of people telling us that they did not leave home during the period that they were asked to isolate. It is not 100%, but it is slightly better than the other surveys. It is hard to put a finger on that.

To sum up, the system gets better and better, the better we get at finding people who have the disease. The more we are scaling testing, and the more we are using mass testing to find asymptomatic cases, it gets better and better. The more all of us play our part in isolating when we are asked to, the more effective the whole testing and tracing will be.



Q377 **Jeremy Hunt:** I did not deliberately look for the most pessimistic and gloomy numbers. I was just looking at the latest reported numbers, but I am fully willing to accept that it might be a little bit better than that. Even if it is higher than 3% of the people you would potentially want to quarantine, it is probably not going to be much more than 10%. It certainly will not be more than 20%. It would be unreasonable to expect 100% compliance, considering that you do not even know about a number of these cases. Is the fact that less than one in five of the people we theoretically want to quarantine are actually doing so why SAGE said on 21 September that the whole test and trace programme is only “having a marginal impact on the transmission of the disease”?

Baroness Harding: Again, I would push back gently and say that we should not be expecting our testing and tracing to account for 100% of the fight against Covid. Clearly, if we were identifying absolutely everyone and everyone was isolating, it would, but that is not realistic in any country in the world for any disease. I think the Prime Minister on Saturday evening called it one of the rays of sunshine. It is not the only one. It is a tool. If it is a tool that contributes to 20%-plus of our fight against Covid, it is a hugely valuable and important tool.

I describe it as our second line of defence. Our first line of defence is our own behaviour: social distancing, wearing a face mask and washing our hands. The harsh reality is that the first line of defence and the second line of defence on their own have not been enough to prevent a second wave. That is true across the whole of Europe, which is why we have to keep expanding our testing and improving our tracing. It is also why we all have to comply with various restrictions.

Q378 **Jeremy Hunt:** I just wonder whether one of the reasons that, unfortunately, the test and trace programme and other things have not prevented us from going into a second lockdown is that you and your organisation have been relentlessly pushed over the last six months to increase the volume of tests and, important though that is, it has stopped you from looking hard enough at an equally important metric, which is the proportion of people actually complying when they are asked to quarantine.

Baroness Harding: I do not think it is an either/or. We have been working across the end-to-end testing, tracing, isolating and supporting journey. If you look over the course of the last five months, we have increased testing capacity, as you said. That is the first step. If you do not have the testing capacity, you cannot work out who to isolate. We have increased testing capacity faster than any other major country in Europe. We have increased testing capacity fivefold since May. Germany has increased it three and a half times, Spain 2.3 times and Italy 2.2 times. That is the first thing you have to do.

We have also been able to maintain our contact tracing rates while the volumes have gone up, as I said, seventeenfold. We have heard evidence this morning from other European countries that are having to suspend



HOUSE OF COMMONS

their contact tracing approach in the current second wave because they do not have a network of local and national.

On supporting people in isolation over the course of the last five months, the Government have allocated significant funding to local authorities. From the end of September/early October, we now have a £500 financial support payment for people who are unable to work and are on low incomes.

Q379 Jeremy Hunt: Let me ask you about that. Professor Harrison, who gave evidence earlier this morning and is the public health director at Blackburn with Darwen, said that many people cannot afford to comply with the request to isolate, even with that £500 support. If you are a taxi driver or are on a zero-hours contract, it is not possible to maintain your income at that level. Wouldn't people be more likely to comply if we had a system like we heard about in Germany, where essentially the state reimburses any wages you lose?

Baroness Harding: I agree with Professor Harrison that all the evidence shows that people are not complying with isolation not because they don't want to but because they find it very difficult, and the need to keep earning and to be able to feed your family is a fundamental element of that. That is why I think the financial support payment is a very good thing. I agree with the underlying driver. As to the actual sum of money, that is not for NHS Test and Trace. That is a decision for the Government, for the Prime Minister and the Chancellor. It is not one for me.

Q380 Jeremy Hunt: On this business about localised versus centralised systems, I want to put to you the evidence we heard this morning from Blackburn with Darwen. They are getting an 89% compliance rate, compared to a 20% compliance rate, or it may be slightly higher, for the centralised system. They said that it is basically local knowledge, down to street level. It is knowledge, particularly of ethnic minority communities, that only a local council is able to have. What do you say to that?

Baroness Harding: Might I clarify what you mean by the 89% and the 20%? I think those might be apples and pears.

Q381 Jeremy Hunt: You may be right. He said that they are reaching 89% of the contacts.

Baroness Harding: The 89% is a combination of the national and local. I was listening to Professor Harrison's evidence. I think he acknowledged that this is a team effort. The majority of the 89% of contacts that Blackburn with Darwen reached were reached digitally. The largest contribution would be people self-serving. The second largest contribution will be the national team supporting Blackburn with Darwen. The local team of Blackburn with Darwen is reaching the people who may be hardest to hear, the hardest to find and the least willing to talk to someone from a national phone number. It is a proper team effort to get to the 89%, which is why I think that is the right model.



HOUSE OF COMMONS

The 20% compliance is a different number altogether. I am convinced that the right answer is the team of teams. It is locally led, exactly as Professor Harrison said. It is local knowledge of how people live their lives in each of our communities across the country, but, if we only do that, we do not have, first of all, the digital platform to enable those of us who quite happily take the instruction and give our contacts electronically. Secondly, we do not have the surge capability, which is exactly what other countries that only have local contact tracing are finding.

We have talked a lot about the asymptomatic transmission of the disease. The other unusual and really difficult part of Covid is that it tends to form in clusters. We do not see a uniform infection rate across the country. If we had resource teams that were solely local, we would find it very hard to surge and support communities like Blackburn, Oldham and others that have had a really tough time through the course of the summer and have needed that extra support.

Q382 Carol Monaghan: Baroness Harding, you talked about contact tracing as one of the tools. Of course, one of the other tools that we have at our disposal is the test and protect app, and I understand that your husband has been informed over the last 24 hours of the need to self-isolate. Why were the privacy settings of the app not at the correct level for the first six or seven weeks that the app was in use?

Baroness Harding: Yes, indeed, my husband has been asked to self-isolate by the app, and duly is. We as a family are living with exactly what that means right now.

In terms of the app, you refer to privacy settings. There was nothing wrong with the privacy settings of the app at all. We have not changed the privacy settings from the version at release and the recent update a couple of weeks ago. What we have done is improve the accuracy of the contact tracing component of the app. That is through a combination of work that Google and Apple have done to improve it—they released a new version of their API—and the work that our team have done, together with the Turing Institute, bringing infectiousness into the calculation.

The new version of the app is more accurate at assessing whether or not you have been at high risk of infection. Nothing has changed in our focus on protecting people's privacy with the app. It was launched with privacy absolutely the focal point. As my husband said to me yesterday, "But I don't know who I was close to." I said, "Yes, I know. That is exactly the point of the app; it is privacy protecting."

Q383 Carol Monaghan: What about the infectiousness settings? Why were they not at the appropriate level to start with?

Baroness Harding: That is more about the scientific community learning and continuing to refine. The Google/Apple API was updated between us launching and the new release, and that has been a global—



HOUSE OF COMMONS

Q384 **Carol Monaghan:** I am sorry to interrupt, but Scotland and Northern Ireland both had their app working appropriately. England was struggling. What was the problem?

Baroness Harding: I am afraid I am not aware of when Scotland upgraded to the new Google/Apple API, which went live after you launched the Scottish app. It would be unfair of me to comment on the Scottish app. I suspect you are much more knowledgeable about that than I am.

In terms of the English app, the English and Welsh app has an integrated contact tracing and venue checking functionality. We worked with the team that developed the New Zealand app that has been very successful. There is broader functionality in the English and Welsh app. We all learn from each other. We went live last week, together with Scotland and Northern Ireland, with interoperability between our respective apps. We are extremely proud of what we have done in the English and Welsh app, which has had much higher take-up than any other app in the world. Over 40% of the eligible population in England are now using the NHS Covid-19 app.

Q385 **Carol Monaghan:** Could I take you back to August? What prevented the testing capacity from meeting demand in August?

Baroness Harding: At the end of July, we published our business plan for NHS Test and Trace, and committed to expand testing capacity to 500,000 a day by the end of October. I gave evidence to the Science and Technology Committee six or eight weeks ago and described how we had built those assumptions.

What happened, not so much in August as in the first couple of weeks in September, was that as schools came back we saw demand significantly outstrip that planned capacity delivery. With the benefit of hindsight, could we have built testing capacity faster? I am not sure that anyone could. The reality is, as you know in Scotland, that you saw the same peak of demand for testing in Scotland as schools came back. None of us was able to predict that in advance. We were moving as fast as the team was capable through the summer to expand testing capacity. As I said, we have expanded testing capacity faster than any of our major comparator countries in Europe.

The good news is that, as we stand now, testing is completely unconstrained across all four nations. Anyone who wants to get a test anywhere across the country can get one today. Because we have also expanded the footprint of testing, there are over 600 sites across the country now. The average distance people have to travel in England is now below three miles. Remember that this is a retail network that did not exist six months ago. It is now larger than the whole of Asda's food business, which has been around for considerably longer than that.

Q386 **Carol Monaghan:** The Chair has already congratulated you on the



HOUSE OF COMMONS

number of tests now being done. You have repeated what you said to the Science and Technology Committee back in September—that nobody was expecting to see the increase when schools went back. How was that possible?

Baroness Harding: The reality is that we are all learning about Covid. We are learning about how the disease behaves, and we are learning about how all of us as human beings in society behave. We see that learning happening in real time across the whole world. What we are trying to do in NHS Test and Trace, with Public Health England, is to react as fast as we possibly can.

I hope what you can see is that the system has reacted incredibly fast. We now have more capacity than demand. We went live last week with GPs across the country now able to order tests as well. We are continuing to make it easier and easier for people to access testing. That is something for us to be hopeful and optimistic about as new testing technologies come on stream. We are learning in Liverpool and with directors of public health across the country how to encourage more people to come forward for testing, making it ever easier to find people who have the disease but don't know it.

Q387 **Carol Monaghan:** You have said that you were not able to anticipate that when millions of schoolchildren and students went back to school and university settings, there was going to be an increase in demand. I think many of us would find that difficult to understand. When do you anticipate that the next major demand for testing will be?

Baroness Harding: First, that is not quite what I said, I am afraid. What I said was that we had anticipated significant increase in demand, and we were building from circa 100,000 testing capacity at the beginning of May to 500,000 by the end of October—

Q388 **Carol Monaghan:** But you actually said to our Committee, “I do not think anybody was expecting to see the really sizeable increase in demand that we have seen over the last few weeks.”

Baroness Harding: I said that we did not anticipate the exact amount—correct—but we were expecting demand to grow, and we were growing capacity faster than any other European country to meet it. With the benefit of hindsight, the balance between supply and the demand forecast was not right. Clearly that is true, but what you have also seen in the last six weeks is that we have met our commitments to get supply and demand into balance.

You asked me about looking forward. As I said, armed only with my crystal ball, all of us are working so hard with experts in science, in medicine and in behavioural science to understand what may happen as we go forward. I would not pretend to be one of those experts. We draw on all of them in order to build our forecasts. The thing we have learnt, all of us, is that more and more testing is a hugely valuable resource. We are now at a place where testing capacity is not the constraint.



HOUSE OF COMMONS

I will hand over to Susan to share her views on how she thinks we will see the disease progress, but from a testing capacity perspective we will continue to expand our PCR—our very high specificity and high sensitivity testing capacity—but we will also now be learning how to deploy rapid turnaround lateral flow tests and LAMP testing, where capacity is not the constraint at all. There are millions of those to be deployed. The question is how to work through the use cases that make them fit with the way we live our lives.

Q389 **Carol Monaghan:** Baroness Harding, I'm sorry to take you back to my question, but when do you anticipate the next large demand for testing? Is it at Christmas time? Is it in springtime? When do we anticipate there will be the need?

Baroness Harding: I was going to suggest that you might want to ask Dr Susan Hopkins for her view because, in the end, this is about a view on where we think the disease will progress—

Q390 **Carol Monaghan:** Well, it is about planning how we are going to tackle it as well.

Baroness Harding: Yes, indeed.

Q391 **Chair:** Do you have a view, Baroness Harding, before we go to Dr Hopkins?

Baroness Harding: As I say, my view is that we need to keep expanding testing capacity significantly and substantially. I think there are a number of different—

Q392 **Chair:** Carol's question was, is there a particular time that you are looking forward at, to anticipate a need for a surge?

Baroness Harding: I defer to the clinical experts on that rather than think that it is my job to know the answer to that question.

Q393 **Chair:** Very briefly, Dr Hopkins.

Dr Hopkins: We know that, as we go through the winter, we will see increased demand for testing because of increased amounts of colds, flus and winter illnesses, a lot of which have very similar symptoms to coronavirus. Previous modelling estimates are that we would need 500,000 tests a day in December. We are ahead of that, but I have no doubt that this season it is likely to be more, which is why we are ramping up and rolling out lateral flow devices and LAMP to give extra capacity to the system, with additional capacity going to the health and care sector as a priority, and with directors of public health being offered large amounts of tests every week to deploy in their local settings.

Q394 **Chair:** One thing you said to Carol Monaghan, Baroness Harding, was that anyone can now get a test.

Baroness Harding: Yes.



HOUSE OF COMMONS

Q395 **Chair:** Is that the case? If people are told to self-isolate because they have been in contact with someone with a positive case, or perhaps instructed by the app, but they do not have any symptoms, can they now get a test?

Baroness Harding: They shouldn't get a test in order to release them from isolation. What I meant when I said that anyone can get a test is that, if you have symptoms and you need a test, you can get one. There are no testing constraints.

Q396 **Chair:** But only those with symptoms are allowed to get a test?

Baroness Harding: Yes. That is not because of testing capacity. That is because of the clinical advice on what contacts should do. If you are a contact of somebody who has tested positive, you are highly likely to become infectious, and the clinical advice is that you should self-isolate for 14 days. Even if you test negative during that 14-day period, the current clinical advice is that you should continue to self-isolate.

Q397 **Chair:** But you have the capacity to test such people.

Baroness Harding: That is correct.

Q398 **Chair:** You may have heard from Sir John Bell, who is regius professor of medicine at Oxford, who thinks that not only is it possible but it is important that people who have been instructed to isolate should be able to get a test. You are telling us that you have that capacity but you are not allowed to use it.

Baroness Harding: What we are currently doing, working with Sir John and others, is piloting the use of the new rapid lateral flow tests with a number of use cases.

Q399 **Chair:** Sure, but you have capacity in your own system.

Baroness Harding: Yes. One of those use cases is to test people regularly during the period of isolation in order to determine if it is possible to release people from their isolation because they are being tested regularly. The current clinical advice I am operating under—as are all of us in the country—is that, if we are identified as a contact, we need to isolate for 14 days.

Q400 **Chair:** Are you making full use of the 500,000 a day testing capacity?

Baroness Harding: It is more than 500,000 as we speak, and growing. We aim to operate between 70% and 80% capacity utilisation in order to be able to deliver improving turnaround times. No factory would ever want to operate at 100% capacity utilisation 24/7, which six weeks ago was exactly where we were having to operate to meet demand.

Q401 **Chair:** That is the optimal figure—about 80%.

Baroness Harding: On average we are. The one thing I would say is that we tend to operate lower than that at the weekends. We have spare



HOUSE OF COMMONS

capacity at the weekends, and we did if you look back through the data. Through half-term, we saw fewer people coming forward for testing and we operated at less than our target 70% for a few days during half-term.

Q402 Dawn Butler: Thank you, Baroness Harding, for attending the Committee. After your last attendance, I wrote you a letter, on 25 September. I have not yet had a response, so I am going to ask a few questions from that letter if you don't mind. I am sure it will not come as a surprise.

Picking up on the bit of evidence that you just gave with regard to capacity for testing, in order to close the loop of your test and trace system, isn't it important that people who are asked to isolate—

Chair: We have lost your sound, Dawn. Try again.

Q403 Dawn Butler: In order to close the loop in regard to the test and trace system, is it not important that people who are asked to self-isolate are tested in order that you can understand how your test and trace system is working? Whether they are asymptomatic or not, should they not also be tested?

Baroness Harding: If it is all right, I think the best person to answer that question is Susan as a clinician. As I said, we are currently running pilots exploring exactly that, but we operate under the clinical advice that at the moment it is important that people isolate for the full period of time. The danger of course is that, if we receive a negative test on day three of isolation, we are tempted to think that we are free of the disease and we break that isolation. There are downsides of testing as well as upsides during that period, but maybe I could defer to my colleague.

Chair: Briefly, if you would, Dr Hopkins, because a lot of colleagues want to ask questions.

Dr Hopkins: We are looking at a variety of approaches at the moment. The first thing to do when looking at those approaches is to model the approach. We have asked SPI-M to look at various aspects of modelling, with shorter duration periods, shorter durations of testing on a single day and shorter durations of testing on multiple days. We will then test those in the field, because this is new and novel. It has not been done globally, so we cannot learn from global partners.

We are working very closely with Matt Ashton, the director of public health in Liverpool, where we have introduced mass testing. We are looking to see both in schools and as part of our contact tracing how we can introduce testing and what impact that has on the population coming forward for testing as well as the impact on isolation.

Q404 Dawn Butler: Baroness Harding, earlier Professor Anne Johnson spoke about the leaky system. Part of the leaky system is tests that are voided. Can you tell the Committee how many tests are voided at the moment, on average?



Baroness Harding: As you say, it is very important. We monitor voids on a daily basis. It is a large operational system, so it varies. It ranges between 1% and 3% on a daily basis. The primary reason that tests are voided is when some element of the kit has broken or has not made it through to the laboratory intact.

Q405 **Dawn Butler:** Can you confirm whether the public are being charged for voided tests?

Baroness Harding: Test and trace is a free NHS service, so no one is being charged for their test. Obviously, the tests have to be processed, whether or not there is a result. A lot of the voids are early in the testing laboratory process and therefore will not incur all of the costs.

Q406 **Dawn Butler:** Treasury documents in July reveal that the Government originally allocated £10 billion for the test and trace system. However, during the Chancellor's winter economic plan he gave the figure of £12 billion. Can you explain the £2 billion overspend, please?

Baroness Harding: It is simply a function of our growing desire to expand testing capacity. As I said, circa 80% of the test and trace budget is testing. That percentage is growing as our ambitions to increase testing capacity grow. The additional £2 billion was entirely to do with testing.

Q407 **Dawn Butler:** In layman's terms, what has the £2 billion been spent on? Is it actually testing people?

Baroness Harding: It is expanding the testing capacity of our PCR testing network. We have announced a number of laboratories that are coming on stream, in Newcastle, Charnwood and Berkshire, over the course of the next few months, so we will go beyond our 500,000 per day capacity target. It includes that, and the other major increment is the development and purchasing of lateral flow and LAMP testing equipment, which is now giving us the potential to pilot whole-city population testing in Liverpool.

Q408 **Dawn Butler:** What advantage is there in employing external consultants to work in public health roles?

Baroness Harding: Perhaps I might answer that question in the context of what we are doing in Test and Trace rather than theoretically. We stood the service up in May at extraordinary speed. As I said, we built something that is the same size as Asda in the course of five months. When you start something very quickly, you need to pull on all the talents across all of society.

When we first started, we had significant resource coming from the military, the civil service, from the NHS and from the private sector. When you do not know what you are building, you cannot offer people permanent jobs when you do not yet have a permanent organisation. You have to employ people either as independent individual consultants or through consultancy organisations. That is one of the important



HOUSE OF COMMONS

components of building the system. We have built something with talents across society.

Q409 **Dawn Butler:** Absolutely. I agree. But could civil servants not have done that job, rather than employing external consultants? *Byline Times* recently revealed that "Outsourcing giant Capita" was paid £1,800 a day to supply senior staff. That is the equivalent of £500,000 a year, when a civil servant could have done the job. Do you think that is value for money, Baroness Harding?

Baroness Harding: We need both. We have fabulous civil servants who have been working every hour that they have on test and trace, but to stand a service up at speed we needed to call on talents across the whole of society, both public sector and private sector. As the organisation becomes more established and more permanent, we are able to offer people more long-term permanent jobs, and we are seeing the proportion of civil servants grow. The teams from the military, from Deloitte and from other consultancies have done extraordinary work, together with our brilliant civil servants and NHS colleagues. I am really proud to represent all of them.

Q410 **Dawn Butler:** The Government's moonshot plan, in which they were going to invest £100 billion, is now essentially being delivered by local authorities through the mass testing programme. Do you now think it is time that local authorities were given the extra resources instead of the money going to private companies such as GSK, AstraZeneca, Serco, Randox and G4S? At the end of the day, local authorities are now doing the job. Should they not get the finance?

Baroness Harding: As I think you heard from Professor Harrison, and I know you would hear from the team in Liverpool as well, this is a team of teams. We need all of them. The fight against Covid cannot be won singlehandedly by any of us. The only way we have been able to deliver the mass population testing pilot in Liverpool is by working with private sector technology companies that have developed the lateral flow test themselves, with the military, who have been helping with logistics, with consulting firms who have designed the testing sites, and with the local authorities who have staffed them so completely brilliantly and engaged their communities. We need all of them. I do not think we can choose one or the other. The only way we will fight Covid is together.

Q411 **Dawn Butler:** We need all of them, but why are you paying one sector a hell of a lot more than the other?

Chair: Is the rate right for the job?

Baroness Harding: I think the important thing is that we are procuring things professionally and efficiently, which I believe we are.

Dawn Butler: Absolutely not.

Q412 **Chair:** It is a public service. Are you getting a discount that reflects the contribution to public service?



HOUSE OF COMMONS

Baroness Harding: As I say, we procure through the Government procurement service. There is a chief commercial officer from the Government's commercial team in the Cabinet Office, and we benefit from all rates that the Government have negotiated with the private sector as part of the Covid fight.

Q413 **Chair:** Do they reflect rates that are consistent with a national emergency?

Baroness Harding: As I say, they are the Government's rates rather than Test and Trace rates.

Q414 **Paul Bristow:** Thank you, Baroness Harding, for your evidence so far. I want to deal with some of the things that have been said, fairly or unfairly, about the operation of NHS Test and Trace and the national contact tracers. An article appeared in *The Guardian* on NHS Test and Trace that claimed that public sector clinicians are being replaced with unqualified private sector workers on minimum wage, and outsourcing means that teenagers are operating crucial parts of England's Test and Trace system.

Is that unfair? What would you say about the training and the qualifications of those who are doing the national tracing?

Baroness Harding: I think it is incredibly unfair on the thousands of people from NHS Professionals working as part of Serco and Sitel and in all our local authorities who are working together to deliver our contact tracing service. I am incredibly proud to represent all of them. I keep coming back to this: it is a team of all the talents. We have been able to expand our approach to contact tracing. We contacted 17 times more people last week than we did at the beginning of August, precisely because we have been able to surge capacity across all those different teams.

We have been taking some of our most experienced teams who call contacts rather than cases. Some of the most experienced agents who do that have been doing non-clinical work at what we call tier 2, contacting people who have tested positive. We have been doing that in order to meet the extraordinary increase in demand for contact tracing. We are seeing very good feedback.

We survey—

Chair: Briefly, if you would.

Baroness Harding: We get customer feedback from people who have been reached by Test and Trace. Over 80% of them say that they have been extremely well supported.

Chair: We have lots of questions to come, so if you could keep your answers brief, I should be grateful.

Q415 **Paul Bristow:** That is very reassuring, Professor Harding. The main



charge is that a centralised approach was wrong and that tracing should have been put under local public health directors. Now that more local tracing has been taken, it is said that is retrospective proof that this was correct. Would you say that was misleading?

Baroness Harding: I started on 5 May, and one of the very first things I did was to appoint Tom Riordan, the chief executive of Leeds City Council, to lead our, at that point, tracing and containment team. I worked with Tom through the summer, and now I work with his successor Carolyn Wilkins, the chief executive of Oldham City Council. I firmly believe, and have believed from the beginning, that this needs to be a local and national partnership. That is what we are building. I think you are seeing that it is delivering in a way that solely local or solely national systems are not.

Thank you for the compliment, but I am not a professor and wouldn't want to masquerade as one.

Paul Bristow: Thank you, Baroness Harding.

Q416 **Barbara Keeley:** I have questions on two different areas, and I might take a different view from the one that Paul Bristow has just taken. The first is on contact tracing performance. I want to take you back to what you said to the Chair of the Health Select Committee earlier. You said that no person can reach someone if they do not have their contact details.

We are talking about teams who have contact details from the test results. You have their test result. You have the name, address, postcode and lots of other information and data about them. It just seemed to me, hearing you say that, that it is an absolute argument for local contact tracing, because they could contact them. What has happened in areas of some of the worst outbreaks is that they have actually gone round and knocked on the door of people they could not reach.

Isn't the argument that a failure to reach the top 30%, 40% or 50% of contacts is because you are not local? If we go back to what Professor Dominic Harrison said about people with local understanding of where the outbreaks are and which areas are more likely to have disadvantages with culture and languages, shouldn't we really be arguing, based on what you said, for local surge capacity? I think all you said to justify having any national capacity is about surge capacity, and you could have that locally.

Baroness Harding: There are two points I would like to make. First, to clarify, anyone who tests positive is automatically reached by us because we send them the message that they have tested positive. We are pretty hard on ourselves in the English system. We only count someone if they have been reached for contact tracing if they have then responded to that message saying that they have tested positive and come back to us. In the Scottish system, for example, once they have sent an email informing someone to isolate, they count that as a successful contact. We set a



very high bar for whether or not we have had engagement with people who have tested positive.

Secondly, I agree with you that the description of where local contact tracing is absolutely at its strongest is when we do not have details for people and you have local knowledge. But you do not want to build a contact tracing system that is solely dependent on knocking on doors. The surge capacity is a very large proportion of contact tracing at the moment because of the scale of the epidemic. We want our brilliant local teams focused on knocking on the doors of the smaller number of people only they can reach. That is why it is a local and a national combo.

Q417 **Barbara Keeley:** I come back to the question of resources. We heard earlier from Professor Harrison that in Blackburn with Darwen, where they have had very high case levels, he had a team of 20 people tracing contacts, achieving 87% contacts reached. That is a very good result from them. He also said that if he had 100 people he could achieve so much more. Why do we deploy this resource nationally when you are saying that there are people they cannot reach? They cannot reach them. They do not understand the area, they do not understand the culture and they do not understand the language. That is what is really wrong with this, isn't it?

Baroness Harding: Can I be clear that the 87% that has been reached in Blackburn with Darwen is a combination of the national and the local? The majority of the 87% have been reached by the national teams.

Q418 **Barbara Keeley:** But you're not. The figures show that you are not. It is very important, clearly, when he was talking about the super-output outbreaks, to have that understanding of the families and the way any community is organised. We can leave it because obviously—*[Inaudible]*—locally led and locally resourced.

My other question is about mass testing pilots, and the confusion about the messaging around mass testing with the rapid test—the point of care tests. What we have seen since early September is real confusion in messaging. The Prime Minister talked about millions of tests being processed, and the level of tests allowing people to lead more normal lives. You, Baroness Harding, said to the CBI that the rapid testing might be a normal cost of doing business to allow non-socially distanced activities.

That has built up the mass testing pilot to a point where people think that if we have that testing we will be able to go back to crowds and go back to non-social distancing. Our last panel of witnesses talked about not being at that point with mass testing. We are not able to allow people to test negative in mass testing and then be part of crowded events.

Clearly, I understand that we need an enablement strategy going forward, but we do not have it yet. Can you clarify the strategy around the use of mass testing and rapid testing? Do you believe that you and others should be more cautious in saying that it will allow people to be



part of crowds and non-socially distanced?

Baroness Harding: I was in Liverpool on Sunday with the team at some of the testing sites. I think these new, very fast turnaround tests offer real opportunity for us to find more people who have the disease but do not realise it and are inadvertently spreading it. We should be hopeful that mass testing offers us another tool in the toolkit.

Q419 **Barbara Keeley:** With respect, that is not what I asked you. We have a confusion in messaging. You have been part of causing that confusion in messaging, alongside the Prime Minister. I asked you to clarify the strategy. Do you believe that back in September, talking in the way you did, about the cost of business including rapid testing and people being able to go about non-socially distanced activities, caused massive confusion?

Baroness Harding: I was attempting to answer your question by saying what I think my view is on mass testing. To be clear, I spoke to the CBI last week. It was not a confusion in September because the lateral flow tests did not exist at that stage.

We are at the very early stages of learning how mass testing will work. We have a number of different pilots with universities, De Montfort and Durham, as Sir John Bell described. Yesterday, we announced working with 50 directors of public health, where we have this week dispatched 500,000 lateral flow tests for them to pilot using those tests in their community—for example, to see if they can enable people to visit their loved ones in care homes.

It is important that we see this technology as the potential to give us more of our lives back, but it is not a silver bullet. It is not the single solution and it never was. I am certain I have never given that impression.

Barbara Keeley: As a final point, all of us as Members of Parliament get correspondence from people who do not believe in this, and fight against the lockdown and the restrictions. I think that the confusion around messaging makes that problem worse with Members of Parliament. It makes it worse because people do not want to be restricted. They do not want to not see their families. Every time somebody like yourself rolls out that sort of comment—business could buy these tests and it could be a way of non-socially distancing—it just causes more confusion.

Q420 **Chair:** Thank you, Barbara. To clarify a question that Barbara asked you, Baroness Harding, do you dispute the notion that local test and trace teams have a higher record of successfully contacting contacts than the national team?

Baroness Harding: No, not at all. I was simply challenging the 87% statistic. That is the combined success of the local and national contact tracing; 87% is the proportion of total contacts reached in Blackburn with Darwen—digital, national and local.



Q421 **Chair:** It is the case, is it not, that over the last five months the proportion of contacts reached and asked to self-isolate has been nearly 100% for local teams, compared with between 50% and 60% for the national team?

Baroness Harding: Yes. Those percentages have remained relatively static. The volumes are very different, though. That is why I think it is important that we have a national and a local system. The local teams have so much more local knowledge. As we keep saying, they have access to more information. As we have just heard, they can go and knock on people's doors, but that is not something you can do for 80% of the people contacted, certainly at this scale of infection. You need both. It is not an either/or.

Q422 **Chair:** When you have that disparity in performance and success rates, and you have local directors of public health telling you that they can do more, why would you not have sorted that?

Baroness Harding: We are working really hard. We have 150 local authorities working with us on local contact tracing partnerships as we speak, and another 150 about to go live. We are keen to experiment and pilot with all of those local authorities in order to do more and more. We see case flow come the other way as well.

Q423 **Chair:** Six months into the virus, we are piloting the schemes?

Baroness Harding: We are learning all the time. I think that is entirely appropriate.

Can I clarify? We see cases come the other way as well. When you see a large outbreak in a particular geography, because you have a finite amount of people in one local geography, however large the team, as part of our partnership, local authority contact tracers send cases back to the central teams as well. We work genuinely in partnership, to make sure that together we reach as many people as possible.

Q424 **Aaron Bell:** Baroness Harding, thank you for your evidence today. Can I go back to isolation? You have made it clear that isolation policy is a clinical decision. To what extent do you consider isolation monitoring part of the responsibility of the test and trace service?

Baroness Harding: We have a role to play in what I would call supporting, rather than monitoring, isolation. Part of our contact tracers' role is to point anybody asked to isolate to the support that they are able to receive from their local authority, either digitally or by giving them phone numbers. Since we went live with the financial support payments and the change in the law to make it mandatory to isolate, we have commenced contacting people during their isolation period. In advance of the legal change, we piloted different approaches to understand what people found was most helpful, supportive and likely to encourage them to continue isolating. We trialled texting, emailing and calling. We now call people three times during their isolation period, to check that they have the support they need and to remind them of their responsibilities.



HOUSE OF COMMONS

Q425 **Aaron Bell:** That is everybody, not just a sample.

Baroness Harding: No. We have now rolled it out.

Q426 **Aaron Bell:** Earlier, you gave us a figure of 54% of people who had not left their home during their isolation. You said that it was not QA-ed. Is that people who have been asked to isolate because they were a contact, or people who have had positive tests? Is there a difference between the two? It strikes me that there would be.

Baroness Harding: The un-QA-ed 54% is a combination of the two. I am very keen to be able to publish that as soon as possible, as we are all learning. I refer you again to the chief medical officer's advice that we should not think of this as a binary: you do or you don't.

Q427 **Aaron Bell:** I understand that. Professor Whitty was very clear about that with us last week. Is there a difference between people who are contacts and people who have tested positive?

Baroness Harding: I do not have the data to prove it one way or the other. Instinct would suggest that, if you know you have the disease, you are more likely to be cautious, but it is only instinct. I do not know whether Dr Hopkins has more data on that than I have.

Q428 **Aaron Bell:** Dr Hopkins?

Dr Hopkins: I don't have any more data at the moment.

Q429 **Aaron Bell:** Could you look at where the 54% has come from and ask people to break down the data like that? It really speaks to a concern that Sir John Bell raised in our previous panel. He also raised a point I want to ask you about. People, especially students, are not engaging with tests because they fear that they and their friends may be asked to isolate. I have heard on calls with other MPs about people turning up to the test centre and then turning around once they realise that if they get a positive test they might have to isolate. Are you concerned that people are not engaging with the system at all because of the requirements of isolation?

Baroness Harding: The reality is that no technology is going to change the fact that if you have tested positive you are infectious and you must isolate. I think people understand that. We are seeing that as ever more people come forward for testing.

I understand the challenges of being asked to isolate if you do not have any symptoms and you do not know whether you are infectious; hence, as Dr Hopkins and Sir John described, the modelling and piloting that is being done to see whether it is possible to use rapid turnaround tests to check every day whether you are or are not infectious as a contact. We will learn a huge amount about that in a very rapid time as we start to pilot those tests.

Q430 **Aaron Bell:** On the suggestion that people could potentially be released from quarantine via rapid testing, are you currently resourced to do that?



HOUSE OF COMMONS

Do you have the number of people who can arrange the tests and make sure that people are tested every other day, or is it something that people would do for themselves?

Baroness Harding: You see us rolling it out, literally as we speak; yesterday, we announced that we were rolling it out to 50 local authorities. With lateral flow tests and the pilot that is ongoing in Liverpool, we are resourcing to support a very wide variety of pilots. At the moment, the lateral flow tests need to be administered by a professional. You take the swab yourself, but the processing, which takes a very short period of time, is done by a trained professional. If it is possible to make those tests entirely self-administered, that opens up another opportunity for us as a society, but at this stage that is not the case.

Q431 **Aaron Bell:** To go back to my previous question about people perhaps not engaging with the system because their friends may have to isolate, do you have figures for people who book and do not turn up to tests?

Baroness Harding: I do, but I do not have them in the back of my head. From memory, I think they have remained reasonably constant through the last six months, as testing has ramped up. I can write to the Committee and share the data we have.

Aaron Bell: Thank you, and if you can do any more on the 54% breakdown that will be great.

Chair: I will bring in Graham Stringer now because he has a question in the Chamber that he needs to leave for.

Q432 **Graham Stringer:** Baroness Harding, I was surprised and shocked earlier at your failure to answer two questions. One, from Carol, was about when you expected a large increase in infections. Because you are the executive chair of the National Institute for Health Protection, I would expect you to have asked that question of professionals before and to have an answer for this Committee.

Secondly, you failed to have an answer on the balance of resources going into local and national public health protection. The crux of the debate about test and trace is whether doing things locally is more effective than doing them centrally. Why don't you have an answer to those two questions?

Baroness Harding: I will take each of those. On the future view on infections, as we have Test and Trace's chief medical adviser on the call in this hearing, I was simply deferring to my medical expert. My personal view on how the future of the virus will unfold is a lot less relevant than the clinical expert's.

Q433 **Graham Stringer:** It was not about your personal view. I would have expected you to have asked that so that you would have a view, as the executive chair of an organisation, having asked the professionals. That is a matter of competence.



HOUSE OF COMMONS

Baroness Harding: I was just explaining why I was deferring to my expert.

Local authority funding is not within the jurisdiction of NHS Test and Trace. As you heard from Professor Harrison earlier, local authorities are using a wide variety of their teams to support their contact tracing efforts. Those are not costs that are available to me. I was simply being straightforward about the data that is and is not under my direct control.

Q434 **Graham Stringer:** In coming to a conclusion about whether it is better to have public health teams more resourced and fewer resources at the centre, surely you should have an answer to that question if you want to be effective. You have given very generalised answers about working together. Fine. We all want to work together, but whether 90% of that is local or 90% of it is at the centre makes a difference. I would have expected an answer to those questions.

Baroness Harding: I am sorry if you felt that I was being evasive. To give you an answer, over the last six months, we have moved significant resource into local contact tracing, so the direction of travel is more local. I would expect it to continue to be more local, but the scale of the virus currently is such that we need to have both. Rather than shifting resource from one to the other, we have been enhancing local contact tracing while at the same time we have been scaling up nationally. It is as simple as that.

Q435 **Graham Stringer:** Of course, given the situation we are in, we need both. I would have thought that it would have been useful not to know the direction of travel, but to know where it was better to put more resources.

I spoke to the north-west regional health people a week last Friday. They told me that it was taking more than three days to get test results back for NHS staff. If the people who were being tested were asymptomatic, that meant that the tests were useless and that those people could have been infecting people in hospitals. That speed is faster than the speed of testing in care homes. Why is it taking so long in these key areas?

Baroness Harding: Thank you for asking about testing turnaround times. I agree that continuing to improve them is very important. As of last week, 62% of the in-person tests were received the day after taking a test. That is up from 46.5% the previous week. For care homes, last week 58% of all test results were received back within 48 hours.

I would be the first to say that those figures need to continue to improve. The new testing technologies that are being rolled out in the NHS—both lateral flow and LAMP—enable turnaround times of less than an hour, which will be hugely valuable for the NHS as it rolls those out. We should expect to see turnaround times continue to improve, now that testing capacity and new technologies have grown.

Q436 **Chair:** The targets that you have been given are for 24-hour turnaround.



HOUSE OF COMMONS

That is the official target. What is the performance against that metric?

Baroness Harding: Let me give you those figures. I have them by different channels. If we look at face-to-face channels, the 24-hour figure, for 22 to 28 October, ranged between 35% and 19%, depending on which type of site you went to. In those cases, the figures improved markedly from the previous week, from 28% to 35% and from 16% to 19%.

As I said, I know that they need to improve. They have been improving week on week every week for the last four weeks, as the testing capacity has come on stream. As I said to your Committee last month, in September we prioritised testing volumes over turnaround times because there was so much more demand than we had capacity. Now that we have more capacity, we are prioritising turnaround times.

Chair: I was keen to know the comparable figures. Sorry, Graham. I interrupted you.

Q437 **Graham Stringer:** Baroness Harding, you would accept that if it takes three days to get a positive result back to somebody working in the NHS, or five or six days to get a positive result back to somebody working in a care home, it is next to useless. That person could have infected vulnerable elderly people or patients in a hospital. Do you accept that it has been a waste of money if you take that long to return the tests?

Baroness Harding: As I said, last week just under 60% of our care home testing came back within 48 hours, which is the best we have done for some considerable time. No, I do not think that it is a waste of money. Any infection getting into any care home is clearly a tragedy, but the infection rates in care homes, for both care home staff and residents, are markedly lower as we go into the second wave than they were in February and March, when we did not have the regular testing programme.

Actually, I would say the complete opposite. We have prioritised testing of social care staff and residents over other use cases in order to make our care homes safer. We are seeing factually that that is the case. It is a hugely important use of scarce testing resource to be focused on our residents in care homes and the staff who care for them.

Q438 **Graham Stringer:** I was not saying that testing people in hospitals and care homes was a waste of time. I was saying that, if it takes so long to get the tests back, people may well have been infected. Of course, infections have come down from when untested people were sent back from hospitals. There are much better preventive systems in both hospitals and care homes now. But tests that do not come back in the right time are a waste of money, aren't they?

Baroness Harding: We are continuing to improve turnaround times. Every improvement makes the system work better and better. I do not agree that it is or is not a good idea based on a particular percentage. It



is important that we continue to test everybody working in social care and in the NHS.

Graham Stringer: Nobody is saying that we should stop. Thank you.

Q439 **Neale Hanvey:** I want to go back briefly to the capacity of test and trace. This morning, we heard from Professor Sir Chris Ham that the movement on testing over the summer was too slow and that left us behind the curve. On 21 July this year, when Professor Whitty appeared before the Health and Social Care Committee, I asked him about ramping up testing during the summer lull, as it turned out to be. Can you give us some idea of your view as to why that did not happen? What were the barriers that prevented it from happening?

Baroness Harding: I am afraid that I do not agree that there was a summer lull in test and trace. Our team was working flat out all the way through the summer to expand testing capacity.

Chair: I think Neale wants to clarify his question.

Q440 **Neale Hanvey:** Can I clarify? It was not a summer lull of testing; it was a summer lull of cases. During that quieter time, why was the summer period not utilised to maximise the capacity of test and trace, so that we were ready for what was widely regarded as a predictable second wave?

Baroness Harding: Sorry for misunderstanding. Actually, that summer period was used to great effect dramatically to expand our testing capacity. Between May and October, the UK expanded its testing capacity by 514%. That compares with Germany expanding by 351% and Spain expanding by 235%. As we stand today, we do more tests per thousand than Spain, Italy, Germany, Sweden, the Netherlands, Ireland, Austria and Norway, across Europe. We would all like to be able to move even faster, but the team across test and trace scaled our testing capacity faster than any other comparable country in Europe.

Q441 **Neale Hanvey:** I appreciate your response, but that does not fit with the narrative of Professor Whitty or, indeed, Professor Ham this morning. Professor Ham said that the movement was too slow. In his evidence in July, Professor Whitty said that it was not feasible to ramp up capacity until there was a second surge. There does not seem to be consistency in the message that is being presented by the scientists and by yourself. I cannot understand why that would be the case.

Baroness Harding: I am sorry, but I do not have the specific quote that you refer to from Professor Whitty in July, so it is hard for me to comment on that. At the end of July, we published our NHS Test and Trace business plan, which set out our determination to have testing capacity of 500,000 a day by the end of October and over 500 testing sites. We had that publicly stated ambition, which we have delivered on.

Q442 **Neale Hanvey:** I will give you a very quick quote from Professor Whitty from that session: "We were so far away from where we needed to be,



HOUSE OF COMMONS

across multiple different areas. The biggest limiting step was on testing. Without testing, there is no system, and our ability to ramp up testing was very significantly strained.”

Baroness Harding: I am afraid that it is hard for me to comment on someone else's discrete quote without knowing the context of the discussion. What I can give you is my view, which is—

Neale Hanvey: I have explained the context of the discussion.

Q443 **Chair:** Baroness Harding, can you give a brief reaction to that?

Baroness Harding: I stand by what I said. There is no doubt that expanding the testing capacity is an essential component in the fight against Covid. More than almost any other country in Europe, we have scaled our testing capacity since the start of the epidemic as fast as we possibly can.

Q444 **Neale Hanvey:** Can I move on to my second point, which is about the deployment of the Innova test—the lateral flow test—and its appropriateness? The data sheet that accompanies the test states that its accuracy for non-symptomatic patients is limited and has not been thoroughly evaluated. What are your thoughts, and those of your medical adviser, on the appropriateness of deploying it in Liverpool, given that limitation? Are data being collected to analyse whether that has had any impact on the efficacy of deploying the test, and the implications thereof?

Chair: There are quite a few questions there. Can you respond briefly, Dr Hopkins?

Dr Hopkins: I am very happy to take that. I have been working with Professor John Bell and others from Oxford University and colleagues at Porton Down to laboratory validate and then clinically validate and evaluate those tests. As John Bell mentioned this morning, the report will be published tomorrow. We will then be able to share with you the full data within that. It includes testing, validating and piloting on symptomatic and asymptomatic individuals. We felt reassured by all of that data, which we reviewed as an expert advisory group before the Liverpool testing went ahead. I have shared the report in confidence with the Liverpool team. Hopefully, it will get published and there will then be clarity moving forward.

Q445 **Dean Russell:** Baroness Harding, I extend my thanks to the team that has been building up the test and trace system over the past few months. It has been absolutely unprecedented.

My question relates to engagement with directors of public health. I am very fortunate in Hertfordshire. I have a fantastic director of public health, Jim McManus, to whom I speak on a very regular basis. I have one question related to that. What is the strategy, and how regularly do you engage with directors of public health to get their feedback and to listen to their learnings on the ground?



HOUSE OF COMMONS

Baroness Harding: Very regularly. As I said, on Sunday I was in Liverpool with Matt Ashton, their director of public health. Perhaps Susan should come in to talk more about the work that she and Carolyn Wilkins, who works for me and leads our contain team, are doing to make sure that we embed the wisdom, experience and advice of our directors of public health in everything we are doing. Susan led a large session at the end of last week. It might be useful for the Committee to hear about that.

Dr Hopkins: We ran a workshop, looking particularly at what we wanted from the future, jointly with local government directors of public health, Public Health England teams and Test and Trace. We are going to use the learning from that workshop to work together with the new director of trace, Steve McManus, who is a nurse by background and is the chief exec of Royal Berkshire, to try to ensure that we implement the best way forward.

I have a weekly call with the presidents of the academy and colleges, including the Faculty of Public Health, and engage with them regularly. I also regularly join a telephone call with the Association of Directors of Public Health. All of them know that they can reach out to me regularly, and they do, by both email and telephone contact. We continue to have very good directors or ex-directors of public health embedded across the test and trace team.

Q446 **Dean Russell:** Are you actively engaging them with regard to getting feedback on things like low cost and opportunities for improvement? I am hearing that some directors of public health may be on those calls, but the recommendations and suggestions they make are not always getting through to the frontline. Is that something you recognise?

Dr Hopkins: My door and my phone line are open—everyone in the country seems to have my mobile phone number—so they can call me at any time. I make sure that I amplify their voice at the board of Test and Trace. Equally, I ensure that we review all of their proposals that come through, to try to find a way forward. Clearly, I do not personally hold the purse strings of local authorities, but I am very keen on ensuring that their voice is heard.

Q447 **Dean Russell:** You absolutely commit to working with them moving forward on any papers that they might submit, for example.

Dr Hopkins: Absolutely.

Q448 **Dean Russell:** Brilliant. Baroness Harding, on the wider strategy with regard to using test and trace to help to slow the virus, could you give an outline of what the strategy is going into the next few months, particularly around how test and trace will help to slow the virus?

Baroness Harding: Absolutely. Thank you for that. There are two main things that test and trace will do as we go forward. The most important is finding people who have the disease or are highly likely to get it, and



HOUSE OF COMMONS

encouraging and supporting them to isolate. We are continuing to scale and to speed up that testing and tracing, to have more tests, so that we can find a larger proportion of the people who have the disease each day and reach them faster.

The second piece is to be able to spot outbreaks early and support local teams to suppress outbreaks before they gain momentum. That is through a combination of more engagement, as Susan has just mentioned, working closely with local health protection teams in Public Health England and local authorities, and data analytics, using the data that we now have from test and trace and from other sources, such as waste water analysis, to spot outbreaks early and then support directors of public health to reach out to their communities to stop them growing.

Think of us as doing those two main things. Our short-term plan has four themes: more scale, more speed, more engagement and leveraging more insight. That is the next phase of test and trace, off the organisation that we have built in the last five months, which, as I said, is already the size of Asda, and growing.

Q449 Dean Russell: With the announcement yesterday on the potential success of vaccines, do you foresee a point when the app will include an opportunity for you to say that you have been vaccinated and, therefore, can be opted out from the test and trace system? I am very conscious that as vaccinations go up, ideally, the testing will not have quite as much pressure on it.

Baroness Harding: It is very early days. As the Prime Minister and Professor Van-Tam said yesterday, we must all be careful not to get too excited and cross too many bridges on the vaccine. My job is to make sure that we scale and speed up test and trace so that it is another arrow in the quiver, as the Prime Minister said yesterday. It is an and, not an or. You are right to point to one of the potential scenarios for the future as being able to use some combination of our understanding of immunity, both natural and acquired, and testing data to enable people to do more things, but it is very early days.

Q450 Chair: Are you preparing for that technical possibility now?

Baroness Harding: Correct. We are.

Q451 Chair: You are doing the work to enable the app, as Dean said, to contain information on whether you have had a vaccine.

Baroness Harding: As you have seen with everything that we have done over the last six months, we have always aimed to invest ahead of the science. That is why we are able to deploy lateral flow tests now and why we have all the different options that are available to us today. We are doing the technological work now, in anticipation.

Q452 Zarah Sultana: I have three questions, Baroness Harding. First, of the 35 organisations that are listed as data processors in the test and trace



HOUSE OF COMMONS

system, only four are NHS bodies. Four are Lighthouse labs, four are Public Health England bodies and another is the Ministry of Defence. The remaining 22 are private companies, including Amazon, G4S, Deloitte and Serco. With those numbers in mind, it is quite clearly an outsourced £12 billion programme, with a large number of private companies running testing sites, processing samples and managing call centres. Given those numbers, do you believe that it is accurate to refer to the system as NHS Test and Trace?

Baroness Harding: Yes, I do. That is its name. NHS Test and Trace is a free at the point of need service that we have built together, as you have rightly listed, with a whole group of different parts of society to deliver something at extraordinary scale. It absolutely meets our basic fundamental NHS values as a clinical service available to everyone when they need it.

Q453 **Zarah Sultana:** That is interesting, given that only four of the organisations are NHS bodies.

Baroness Harding: Could I clarify? The NHS laboratories process testing data as part of NHS Test and Trace as well. They might not appear in your list of NHS data processors, but, plainly, the NHS tests are an integral part of our overall team of teams.

Q454 **Zarah Sultana:** My point is that the vast majority are not NHS.

Secondly, despite promising to abstain and stay neutral on the Immigration Bill due to your NHS roles, you voted in line with the Conservative party on immigration and its impact on the social care sector. Do you think that that political partisanship will affect public confidence and compliance with the test and trace system, with particular reference to migrants and those with a precarious immigration status?

Chair: This is an appearance that Baroness Harding is making in her official capacity. She is welcome to answer that, but it is a different question as to what her voting is in the House of Lords.

Baroness Harding: I am on the record in front of this Committee when I was appointed as the chair of NHS Improvement that I would not vote on health and social care matters in the Lords but that I would vote on Brexit matters. The vote in question was a Brexit issue.

Q455 **Zarah Sultana:** SAGE advises that test and trace can only work effectively if at least 80% of close contacts are tracked and told to quarantine. Statistics for the week ending 28 October show that the system saw just 59.9% of cases in England being reached. The figure was down from 60.6% from the previous week and only 60% in the week to 14 October. These have been the lowest since the system was launched.

In September, as constituent MPs, we all had constituents—although I only speak for myself—who got in touch after being told that they should drive to Inverness to get a test, and there were cases of people having to



HOUSE OF COMMONS

wait for more than five days for results. In October, we saw the Excel technical glitch that led to nearly 16,000 positive cases of Covid-19 going unreported.

There have been calls for the test and trace system to be scrapped and the role to be handed to public health teams, most recently by Sir John Oldham from Imperial College London. There have been calls by the GMB union for you to step down. Given that catalogue of failures, should you be reconsidering your position?

Baroness Harding: Thank you for that report card. If we sit back and compare what we have delivered versus what we said we would at the end of July, we have met the vast majority of our commitments. We committed to building testing capacity to half a million per day by the end of October. Testing capacity today is over 500,000 a day. We committed to making it possible for people to access testing across the whole country by having at least 500 testing sites. We have over 600 testing sites. Today, people have to travel less than three miles to get access to a test.

This is a service that did not exist six months ago, yet we have built a retail organisation larger than Asda, and we have delivered on our commitments. That is not to say that we cannot get better. Clearly, we need to, and we can as we continue to expand capacity and continue to improve on turnaround times and contact tracing rates. We reached 81.2% of positive cases last week and, unlike other countries that have relied only on a local contact tracing system, we have been able to cope with a 17 times growth in volume since the beginning of August, whereas Germany, France and Spain have all been struggling and have had to suspend some of their contact tracing.

No one likes being able to describe how good or badly they have done a job. Personally, I always revert back to thinking I can do better. What the team from the public sector, the civil service, the military, the NHS, and the private sector have done in the course of the last six months is an extraordinary thing. It is making a real difference to the country. We need to do more and we will keep doing more, but I am very proud of representing the people who have put all that work in.

Q456 **Laura Trott:** I want to pick up on a number of other Committee members' questions around compliance. At the outset, Baroness Harding, you said to Jeremy that evidence shows that people find it difficult to isolate. Can you give us further insight into the reasons and the evidence behind why people are not quarantining and isolating as they should be?

Baroness Harding: One of the challenges is that it is all based on self-reporting evidence. There are a number of competing different surveys in terms of the percentages. The qualitative feedback that we have had is that it is not because people do not want to play their part; it is because it is hard. It is hard practically to be able to have enough food to be able to isolate over the period of time, and to be able to afford to do all the



HOUSE OF COMMONS

shopping up front. A lot of people cannot do that. If they have caring responsibilities for children or elderly relatives, how do they organise that? The practical challenges are very difficult, as are the mental health challenges. It is really hard to stay inside without contact with friends or family for up to 14 days if you are a contact. People report wanting just to have some fresh air.

That is why it is important that we do not convince ourselves that you either completely comply or you do not comply at all. There is a big difference between someone who goes outside for 10 minutes at midnight to have a quick walk on their own while wearing a face mask to get some fresh air from someone who chooses to go to a party even though they know they tested positive. We see much more of the former than we do of the latter. We have to work hard, and local authorities across the country are doing just that, to provide people with the support they need, both practical, financial and mental to cope with what is a tough thing to do.

Q457 **Laura Trott:** Have you proposed any policy changes on the basis of that evidence?

Baroness Harding: The main policy change over the course of the last few months has been the financial support payment: £500 for people who are not able to work from home and are on universal credit.

Q458 **Chair:** Did you propose that, Baroness Harding?

Baroness Harding: No, sorry. I said that is the main change.

Q459 **Chair:** Laura asked if there are any policy proposals that you have made.

Baroness Harding: Providing additional financial support is something that the test and trace team has presented evidence for over the course of the last few months.

Q460 **Chair:** Financial support to?

Baroness Harding: To people finding it hard to isolate.

Q461 **Chair:** Any other areas?

Baroness Harding: The other area is continuing to work with local authorities on making it easier for people to find the support offer that each local authority has. We have done a lot to adapt our scripts and make it easier through calls and texts. Right at the beginning when I started in May, Tom Riordan and I worked very hard across Government on setting out the local containment plans and the £300 million of funding that went with that to enable local authorities to build support packages. We have been part of the jigsaw of Government, local and national, working out how to support people through isolation.

Q462 **Laura Trott:** Baroness Harding, you said that monitoring compliance is difficult, and that is obviously true. It is also equally critical in order to work out whether what we are doing is effective or not. What are your



plans to increase the monitoring of compliance going forward, and what is your strategy to make sure that that is effective?

Baroness Harding: There are a couple of things. The support calls that we now make to people who are in isolation give us the opportunity both to monitor actual behaviour and to understand responses. There is another area of data. This is very early days and it is un-QA-ed, but it is an interesting avenue. When someone tests positive, they give us their contacts. We ask the contacts to isolate. A proportion of those contacts go on to get the disease.

We see that a very high percentage of people who test positive while they are a contact only have household contacts; they have not gone out and mixed with non-household contacts, which gives you a sense of how many of the contacts are complying with isolation. It is early days for us to be able to share that data, but we have growing sets of data that we can piece together to get a better picture of compliance with isolation.

Q463 **Laura Trott:** That makes sense, although a comprehensive strategy on monitoring compliance would be helpful.

Professor Sir John Bell said earlier that we need to get buy-in from the public and proposed a strategy of enablement, as he called it. Dr Hopkins said that you are testing the efficacy of a number of systems that he proposed. Overall, do you agree that we need to move towards a strategy of enablement as Professor Sir John Bell described?

Baroness Harding: We must be science-led. In the work that Sir John and Susan are doing together, it is so important that what we do reflects the way the virus behaves. I know we all want to be able to get out and do more things but we must be led by the evidence. I make that rider.

I am thinking of our testing strategy particularly in three forms, of which enablement is one. We need to find the disease, we need to protect the most vulnerable, and we need to use testing technologies to enable people. It is not only enable; we need to do the other two as well. It is important that we find the infectious people and break the chains of transmission. It is also important that we use testing to protect the most vulnerable—the care home and NHS testing programmes, for example. But Sir John is right; there is a third testing opportunity, which is using it to enable more freedom as the science teaches us when we are less risky and, therefore, able to do more.

Q464 **Laura Trott:** Will you bring a proposal on that front in due course?

Baroness Harding: Indeed.

Q465 **Chair:** I am sure you have seen the SAGE assessment that there is a 48 to 72-hour window in which to complete the process of testing suspected cases of Covid, tracing their contacts and asking them to isolate. If it is beyond 72 hours, the assessment is that that increases R. Do you recognise that, and as someone who is head of an organisation that



HOUSE OF COMMONS

brings together each part of that chain, what is the current performance on testing, tracing, and asking people to isolate within 72 hours?

Baroness Harding: I recognise the SAGE advice and maybe Susan would like to comment on it as well. One really important element of that 48 to 72 hours is the time from someone starting to feel ill to actually getting a test, and that is the reason why I cannot give a firm, quantitative answer to your question. On that first piece, I do not have quantitative evidence.

Q466 **Chair:** Can you give it from someone first contacting NHS Test and Trace to request a test because they have symptoms?

Baroness Harding: I cannot give you a complete end to end average at this stage. It is something that we are working to develop as we connect all the different systems and as we scale. I would like to be able to give you one number, but I do not have it yet, I am afraid.

Q467 **Chair:** Isn't that the key measure? The whole point of the exercise—the whole point of your organisation—is to bring the rate of infection down and to curb the spread of the disease.

Baroness Harding: There are a number of key measures. Those are two. There is one other, which is the number of people—the proportion of positive cases—that we find that come into the system. Having something that is fast but finds only a very small proportion is not effective. We are working on improving both.

Today, we reach circa 45% to 50% of people who test positive. I say circa because the ONS estimate is a central point with quite a large confidence interval. Clearly, we have work to do to get to the majority of people being tested and contacted within 72 hours. We are reaching a meaningful proportion. If you look at the percentage of people who get a test back—

Q468 **Chair:** What proportion do you think?

Baroness Harding: Let me disaggregate it for you. I will give you the two pieces. In terms of the proportion of people who get a test back within 48 hours, 62% of people get their test back the next day if they come face to face, and 58% get the test back through our care home channels. Let's say that roughly 60% are within 48 hours—quite a proportion of them are better—for their test result, and between 70% and 80% of people are contacted within 24 hours of getting the test result right.

The reason I do not want to combine the two is that I cannot track the individual through that to give you something that I know the UK Statistics Authority would be able to confirm is fair. I still have to give you those two separate pieces, but we are not far off. If you say that 72 hours is what really matters, we are not far off contacting the vast majority of people through that journey.



Q469 **Chair:** What would be world beating?

Baroness Harding: That is an interesting question because very few systems around the world publish as much as we do and have a national and local system—I am sorry to be a broken record. Other countries are not able to publish it because, if they have a solely local system, they do not have national data. We publish much more than any other system that we have found. We do not have visibility of another country's single figure in the way you are pushing. If I look for where the best practice is, I look at individual components in it.

We have built the largest scale testing machine in modern times, and we can rightly say that we are world class there. We are copying the Japanese extended contact tracing system that enables you to reach back and find hotspots. We have copied from New Zealand the QR code system. We are taking best practice from a number of different places. I do not think you can say that one country in the world has got it cracked. All of us are learning, and we are learning from each other.

Q470 **Chair:** Is world beating a realistic aim? Is it possible to distil the best from each of those and be world beating?

Baroness Harding: We should be aiming to have the very best test and trace system that we can possibly have as a country. As I have said a number of times this morning, I am incredibly proud of the teams across the country that have delivered what we have, but there is clearly more we have to do.

Q471 **Chair:** This is a lessons learnt inquiry. We are seeking to learn the lessons of what has happened in a number of respects during the course of the pandemic: the beginning, during the summer, and recently. You have been good enough to witness some of the evidence that we have had today. There are some big questions to learn from what we have learnt so far to guide some decisions in the future, and you have the privilege of being head of an organisation that has a pretty broad reach.

Some of those questions are whether we should be moving towards a more locally focused contact tracing system relative to a national system. They are whether the question of compliance with isolation might be better observed if people were able to be confined for less time and released if they are tested and found to be negative, and whether we can be better at anticipating future needs for surges in capacity such as we saw in September.

In the spirit of trying to learn lessons that we can apply over the next few weeks and months, perhaps you would briefly reflect on these three things: the local versus the national in terms of contact tracing, the demands that we place on people being isolated and our ability to anticipate what is around the corner.

Baroness Harding: Absolutely. I think I have been quite clear. My view on contact tracing is that we need a mixed model of both local and national, physical knocking on doors but also telephone and digital. As we



HOUSE OF COMMONS

work together with local authorities, we continue to refine and improve that mixed model. We are going to need all, not either/or, and it is a mistake to think of it as one or the other.

On isolation, the key is that we have to be guided by the science. It is hard to isolate for 14 days, particularly if you do not feel unwell and it is making life hard for you and your family and your loved ones. We cannot change it unless we can find scientifically valid ways of breaking the chains of transmission that are easier for us to live with. What is encouraging is that the developments in testing technologies make that more possible than it was even six weeks ago. I very much hope that the next time I give evidence in front of the combined Committee the science has helped us unlock more of that, and made it easier and more human for us to isolate in a way that works, but we do not know that yet.

In terms of anticipating, there are two big challenges that we have learnt in the last six months from this virus. The first is the amount of asymptomatic transmission. It has taken the world a long while to understand that. Looking forward, the more we can develop ways of working with the way we live our lives to find people who have the disease, the easier it will be to see what is around the corner. If we can see what is around the corner 14 days ahead, we can stop people infecting others. Looking around the corner, we have a range of pilots ongoing, the headline one being with the city of Liverpool for mass testing, but also with universities, schools, and directors of public health. You would really hope that, as we look forward, we will get better, as a world, in being able to stop outbreaks from spreading because we can find asymptomatic transmitters earlier.

The other area of looking round the corner is human behaviour. This is not just about clinical science; it is also about social science. It is about developing testing and tracing and isolation support mechanisms that work in our society and that we can live with. Over the course of the next few months, the new technologies and the scale test and trace service we have built will give us more tools to make that more liveable for us all.

Q472 **Chair:** A member of the Committee, Luke Evans, asked whether the structures that have been put in place will be retained for the long term to serve us in the event of future pandemics, such as we learnt countries in east Asia did. Is that part of your intention?

Baroness Harding: Right now, my team and I are very heavily focused on the fight against Covid here and now. It will be very important for the National Institute for Health Protection, as it is formed, the Department of Health, the Government, and the NHS as a whole to reflect on how we build infrastructure for the future. I heard Professor Jo Martin describe it earlier. We have built a very large diagnostics industry and it is important that the country benefits from the infrastructure that has been built when we go beyond Covid, not just to make sure that we have surge capacity for other infectious diseases, but so that we can use the laboratory capacity to treat other diseases going forward.



HOUSE OF COMMONS

Chair: Thank you very much indeed, Dido Harding and Dr Susan Hopkins. We are very grateful for your evidence today. We recognise the very hard work that your staff do up and down the country. These are difficult decisions. I know that everyone has been dedicated to making the best of the situation we have. Your evidence today will allow us to make reflections that are designed to help to draw some lessons that have some application during the weeks and months ahead. That concludes this meeting of the joint Committee.