HOUSE OF COMMONS

Health and Social Care Committee

Oral evidence: Management of the Coronavirus Outbreak, HC 36

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Watch the meeting

Members present: Jeremy Hunt (Chair); Paul Bristow; Amy Callaghan; Rosie Cooper; Dr James Davies; Dr Luke Evans; Barbara Keeley; James Murray; Taiwo Owatemi; Sarah Owen; Dean Russell; Laura Trott.

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Witnesses

I: Chen Chien-jen, Former Vice-President of the Republic of China (Taiwan).

II: Professor Christophe Fraser, Professor of Pathogen Dynamics, University of Oxford.

III: Baroness Dido Harding, Executive Chair of NHS Test and Trace programme, Department for Health and Social Care.

IV: Lord Deighton, Adviser to the Secretary of State on PPE, Department for Health and Social Care.

Examination of witness

Witness: Vice-President Chen.

Q492 **Chair:** Good afternoon and welcome to the House of Commons Health and Social Care Select Committee. This afternoon we are going to focus on two of the most important issues in tackling the coronavirus pandemic: the functioning of a test and trace system, which went live last week here in the UK, and the provision of protective equipment. We have a very distinguished panel of guests who are going to talk to us about those issues, and I give them all a very warm welcome.

First, we have the former Vice-President of Taiwan, Chen Chien-jen, himself a distinguished epidemiologist, who is going to talk about the Taiwanese experience where, remember, they have had just seven deaths from coronavirus, one of the best records anywhere in the world. You are most welcome, Vice-President, and thank you very much for joining us.

Vice-President Chen: You are welcome.

Chair: We have Professor Christophe Fraser from Oxford University. He is a professor of pathogen dynamics and an expert in contact tracing systems around the world, who has been helping on the development of the NHS app that is due to be launched. A very warm welcome to Professor Fraser.

We also have Baroness Dido Harding, who was appointed by the Prime Minister to head NHS Test and Trace, which went live last week, so welcome to Baroness Harding.

Later, we will be joined by Baron Paul Deighton—Lord Deighton—who is an adviser to the Secretary of State on protective equipment. We will be able to ask him some questions as well.

I want to start, if I may, with Vice-President Chen. Thank you again for joining us. We mentioned that Taiwan had just seven deaths and only 441 cases in total, despite being right next door to mainland China. What do you think are the most important elements in the success that Taiwan has had in tackling coronavirus?

Vice-President Chen: There are three keys to the success of Covid-19 control in Taiwan: prudent action, rapid response, as well as early deployment. As of today, there is a total of 443 confirmed cases in Taiwan, with seven deaths. In other words, the case mortality rate is 1.6%; and among the 443 confirmed cases, only 55 were locally transmitted cases. In other words, only one death—12%—was locally infected and 88% were imported cases.

In Taiwan, we try our best to do contact tracing and all kinds of possible tests of high-risk groups. In Taiwan, there were only 10 cases without identifiable infection sources. In other words, in only 2% of confirmed cases could we not trace the infection source. What we are doing is very

well-designed contact tracing using smart technology to help each case to recall their previous 14 days' experience of contact and to identify their close contacts.

We identify a lot of close contacts of confirmed cases and ask them to stay at home for 14 days for home quarantine. Around 150,000 people have to be home quarantined or home isolated, but through that kind of home quarantine, all the other people in Taiwan—there are 23 million people in Taiwan—can go to school and go to work. We only limited the liberty and the daily activity of 150,000 people.

Q493 **Chair:** Can I ask about the quarantining of international visitors? From next Monday, we will be asking all visitors from abroad who come to the UK to quarantine for 14 days. In fact, the Home Secretary is making a statement to Parliament at the moment announcing that. In Taiwan, do you quarantine everyone who comes from abroad for 14 days, or is it just people who have come from virus hotspots?

Vice-President Chen: Nowadays, we ask all inbound passengers from other countries to have a 14-day quarantine at home. If their home is not large enough and they do not have a single room for the quarantined person, they can go to a public quarantine space and stay there for 14 days. Yes, we ask for quarantine of all inbound passengers from other countries for 14 days.

Q494 **Chair:** Do you think you would consider, for example, having an air corridor with a country such as South Korea that also has a very successful track and trace system, so that you would avoid the need for quarantining from countries that you know have been successful in tackling the virus?

Vice-President Chen: I think that kind of home quarantine is essential for us to prevent the spread of the virus through infected people. They are still in the so-called incubation period, when cases are likely to be infectious but they do not have symptoms, or they have mild symptoms or signs. It is very important for us to be careful, and for all possibly infected people to be quarantined for 14 days. That is our strategy, and we consider it a very successful strategy to prevent the spread of the virus through mild cases or cases in the incubation period.

Q495 **Chair:** You have a pretty strict system. Someone who is in quarantine has to download an app; they have to keep their phone with them; they are called twice a day to check that they still have their phone; and if they do not pick up the phone they get visited potentially by the police, with big fines if they are not complying. How important is it to have legal sanctions as opposed to just relying on voluntary compliance?

Vice-President Chen: In Taiwan, we ask civil workers to help us make phone calls to those who are home quarantined, and our health workers make phone calls to those who are home isolated. That kind of action of course takes a lot of human effort, but we also use smart technology to

help us. We have the LINE bot system, so the patient can send a LINE message to Government officers to indicate their condition.

Also used in that way, we have what is called digital fencing, and we can collect good information about quarantined people and their health status as well as their needs. We provide care and support services to all home-quarantined people. The home-quarantined person gets a subsidy of NT$1,000, which is around US$30, so we give them support. If they need any kind of medical care, we send an ambulance to take them to hospital for healthcare. In those ways, we consider that our home quarantine or home isolation programme is successful. People who are quarantined or isolated are willing to collaborate with the Government, and their compliance is quite good.

Q496 **Chair:** It is really about speed. If someone has coronavirus symptoms and they test positive, how long is it before you have tracked down all their close contacts and asked them to isolate themselves? What is the time period?

Vice-President Chen: Once there are confirmed cases, and our infectious disease physicians do the disease investigation, most of the cases can be finished within one to three days. It depends on the location and how complicated the person's lifestyle is. Some people have multiple contacts and some people live at home; they are housewives or they work at home. It depends on how complicated the information is, but for most cases we can collect the information within days—very rapidly.

Q497 **Chair:** How quick is it to turn around the test? Once you have collected a test sample from someone, how quickly before you know the result of that test?

Vice-President Chen: Once we have the samples, we can get the test result within one day. We have more than 140 testing sites in Taiwan, so it can be delivered very quickly and we can get the data quite quickly. That is important for us because, if we are going to do contact tracing, the earlier we get the information, when it is quite fresh, the easier it is to do the contact tracing.

Chair: Thank you very much indeed. I would like to bring in some of my colleagues.

Q498 **Amy Callaghan:** I have a quick question. Are there elements of your programme that you believe could be applied to other countries in order to result in successful track and trace systems?

Vice-President Chen: Yes, we believe that this kind of contact tracing needs the co-operation of the confirmed cases. We have to pursue confirmed cases to provide information about their close contacts. Sometimes people have a poor memory, so we have to use some smart technology to help them—for instance, their telephone call records or their smartphone location. If we use that kind of information, we can help people to recall the 14 days' history of their contacts, travelling,

clustering, or even their occupational contacts. In that way, we can easily get the so-called TOCC information, which is useful for us to do the contact.

Of course different countries have different customs and different lifestyles, but I consider that, for the time being, without effective antivirals and vaccines, contact tracing is important. It needs the help and co-operation of the confirmed case, and I believe the British people will more than care to co-operate with Government to provide that information.

Q499 **Paul Bristow:** Thank you very much indeed for coming to speak to us, and congratulations on what appears to be a job well done. What one thing would you say has been of most benefit or has been the most important in your approach?

Vice-President Chen: Taiwan has a very vibrant democracy, and in our approach the most important thing is that people trust our Central Epidemic Command Center. Our command centre asks all the people to co-operate with them. On the very first day, when the first Covid-19 cases occurred in Taiwan, we started our CECC—Central Epidemic Command Center—and through the CECC, every day, we have a press conference and we keep openness and transparency of all the information. We communicate with all the people about that, about our strategies and the regulations that people have to comply with.

It is quite easy to gain the trust of the public. That is the way we try to urge all the people to co-operate with the CECC and, fortunately, the CECC is highly trusted in Taiwan. It is very important to get the trust of the public in order to implement any kind of control measures.

Q500 **Paul Bristow:** Is there anything in your approach that you feel would not be suitable here in the UK? Let me rephrase that. Is there any reason why you feel we would not be able to roll out elements of what you have done in Taiwan in the UK?

Vice-President Chen: I do not know exactly the situation in the UK for the time being. I have been there several times, but not for the time being, but I think—

Q501 **Paul Bristow:** Is there anything specific to Taiwan, do you think, that has worked particularly for you that might not be applicable elsewhere?

Vice-President Chen: I think in the UK and elsewhere, as well as in Taiwan, we try our best to keep social distancing, and since the lifestyle is quite different in Taiwan and in the UK, some of that kind of effort may be different. But social distancing is still very important in Taiwan, in addition to tracking. In Taiwan, the Government urged all the nightclubs to close and asked people not to go to public gathering places. They are more likely to comply with that in Taiwan, I think.

Q502 **Paul Bristow:** Is there anything that has been undertaken in Taiwan

that you feel has not worked as well as it might have done?

Vice-President Chen: During this period of time, we implemented around 100 different kinds of strategies and regulations for people. Of course, not all the regulations have been complied with very well. Most people complied, but a small proportion of people still do not comply with orders, programmes or strategies, and they get a very heavy fine for that. In addition to urging them to do it well, we also have some kind of punishment.

Q503 **Paul Bristow:** How have you found scrutiny of the decisions you have made in Taiwan? Have the media broadly been supportive of the measures you have taken, or have they perhaps been critical and have you found the scrutiny from the media challenging? The same goes perhaps for opposition political parties.

Vice-President Chen: That is a very good question. I just mentioned the CECC. In Taiwan, for the time being, the CECC has very high appreciation from the public. According to a recent poll, more than 90% of people are satisfied with the actions of the CECC, so the Opposition parties basically cannot say too much about what we are doing now. It depends on the trust of the people, and our public trust our CECC very much. So far, the opposition parties have not caused us any big trouble at all.

Chair: Let us go to someone from an opposition party here and see if it is the same.

Q504 **Taiwo Owatemi:** Thank you, Chair, and thank you, Dr Chen. The track and trace system has started a debate in the UK about our civil liberties. A recent survey has shown that as few as 50% of Brits would download the NHS track and trace application. In part, people are concerned about the Government's ability to track and trace where they are and their exact location. Are their concerns legitimate, and what do you think has made the tracing system so successful in Taiwan?

Vice-President Chen: It is very important to have a law to provide us with the authority to do the checking. After the SARS outbreak in 2003, we amended our infectious diseases control law. The infectious diseases control Act allows the health command centre to do all kinds of tracing activities when there is an outbreak. One more thing that is important is to keep the confidentiality of all the information collected from individuals. Confidentiality protection is very important; we do not release any individual data to the mass media, to protect privacy.

Once privacy and confidentiality can be guaranteed, people are more willing to agree that, yes, that kind of tracing is good for the entire public. There is a kind of balance between individual liberty and public welfare. In Taiwan, since we have had the experience of the SARS outbreak control, people can see that the sacrifice of some individual freedom is good for the entire population and they are willing to do contact tracing. I think that, legally, you have to have an Act or an

amendment to an Act. The second thing is to provide good protection of privacy and confidentiality. Then people will like to comply and will agree with that kind of tracing activity.

Q505 **Taiwo Owatemi:** Are you saying that people comply due to their trust in the Government?

Vice-President Chen: Yes, I consider that public trust is very important.

Q506 **Dr Davies:** Thank you, Vice-President Chen, for sharing your experiences of Taiwan with us. I wondered whether the experiences of the SARS epidemic in 2003 influenced your approach to this pandemic, and whether you have any frustrations that countries around the world are not necessarily following best practice from you and others. Should there be better mechanisms in place? Are too many trying to reinvent the wheel when it comes to creating apps, for instance? Thank you.

Vice-President Chen: In the SARS outbreak in 2003, we found that there was indeed a lot of inadequacy for us in controlling the outbreak very well. That included the organisation of our Ministry of Health as well as our CDC; and we had inadequacy for that infectious disease and our fiduciaries and so forth. After the SARS outbreak, we amended the infection control Act and we had a reorganisation of our Health Ministry as well as the CDC, the healthcare system and hospital infection control. All those efforts helped us to do good pandemic control for Covid-19 this year.

More importantly, I want to emphasise that, although different countries should adopt different strategies according to their situation, the co-operation of the people is definitely very important. In Taiwan, with regard to home quarantine and maintaining good health behaviour, including the wearing of face masks, washing hands with soap frequently and having stringent sick leave—don't go to work or to school when you are sick—Taiwanese people are compliant; they are quite good.

That is the situation in Taiwan. We learned from the difficulties and disasters in the year 2003, and maybe that is the reason why people in Taiwan are much more willing to help the Government to control Covid-19 in Taiwan this year.

Chair: Thank you. Dr Luke Evans has a follow-up on culture.

Q507 **Dr Evans:** Vice-President, in answer to the same question, we heard last week Professor Lum from Hong Kong say that it was built into the culture of Hong Kong people; he said he washed in the shower before he even handled his children. How do you get to that stage? Does Taiwan follow the same pathway? Is it because of learned experience or is it something the Government have had control over and you have had sustained campaigns to build it into your system?

Vice-President Chen: Health education and risk communication is very important. I just mentioned the year 2003, the SARS outbreak, and then

we came across H5N1 avian flu from mainland China and H1N1, a pandemic flu, in the year 2009. From those pandemic controls, we have continuous education about maintaining good health behaviour from kindergarten and elementary school, so it has been developed in young children's education dating back to 2003.

With our CECC, through mass media, we try our best to educate people that maintaining good health behaviour is good for yourself and good for all your friends, so it is kind of a win-win—good behaviour—and people are more willing to comply. I know that is the situation not only in Hong Kong and Taiwan but also in Singapore.

Q508 **Dr Evans:** My follow-up to that question may be quite hard to answer. Do you have a feel for whether it was learned culture? Was it the education you put in at schools or the public health campaigns? Was one of them emphasised much more than the other? In all these things, it is always a combination, but for us learning in the UK, do you have a feel on where we should emphasise it—at school level, at national advertising level—or is it simply the fact that it is learned behaviour?

Vice-President Chen: I think you can do it very well. Maintaining good health behaviour should be included in the educational programme from the kindergarten at three, to 12; it is very important. In Taiwan, parents and teachers see that we have to co-operate with each other to let our children gain good health behaviour.

It was quite interesting that in Taiwan when we asked young children to put on their face masks, some children said, "Oh, okay, but it is difficult," because the face mask was too large, too big for them, so we had to produce smaller face masks for young children. We put cartoon figures on them, and once they get one, the children say, "It's interesting," and they put it on easily. It needs some kind of design to encourage children and young people to engage in health behaviour.

Q509 **Rosie Cooper:** Vice-President Chen, it is clear that Taiwan has set a really good example, and you have done really well in this pandemic. Would it have been helpful to you, or indeed to us, had you been a member of the World Health Organisation? You have been discarded from it and not allowed to participate. Has that impacted in any way for you, and has it stopped us learning?

Vice-President Chen: Sure. In pandemic control, nobody can contain the disease alone. We need international collaboration, and data sharing and experience sharing are very important. Being excluded from the World Health Organisation, it is very difficult for us to get data or control strategies from other countries, so we have to use bilateral exchanges in order to get all that information.

Through the World Health Organisation we can get more comprehensive information, as well as the more comprehensive strategies that different countries have adopted. I consider that, left out, Taiwan became an

orphan of global health and that is unfair to the 23 million people in Taiwan. Unfortunately, we cannot provide our experience to other countries either. If Taiwan were to become an observer of the World Health Organisation, basically, it would be a three-win policy: good for Taiwan, good for the WHO and good for the international community. It is a win-win-win policy. But, unfortunately, we have not been invited to participate yet.

Chair: Thank you very much indeed. We are going to say thank you and goodbye to Vice-President Chen. We greatly appreciate your joining us and the very informative answers to the questions that we have given you. We appreciate that it is late in the evening in Taiwan, so thank you too for staying up for this session.

Vice-President Chen: Thank you very much.

Chair: Thank you very much indeed.

Examination of witness

Witness: Professor Fraser.

Q510 **Chair:** We are looking at the issue of contact tracing systems around the world and in England. Our next witness is Professor Christophe Fraser from Oxford University. A very warm welcome to you, Professor Fraser. Thank you very much for joining us.

You have looked at a lot of contact tracing systems around the world. This is not an attempt to put Dido Harding on the spot when we hear from her later, but when you look at global best practice, do any things jump out at you that other countries are doing that we are not doing here but should be doing?

Professor Fraser: At this point in time, we are transitioning from a message that is "Stay at home", based on lockdown, which you can think of as a mass quarantine of most people in the country, to people coming forward and engaging with testing, and encouraging rapid testing and rapid engagement with the test and trace system.

In the strategy and the direction of travel, where we are emphasising the role of an integrated test, trace and isolate system, we are clearly moving towards the systems that have been adopted by countries with best practice, but it is fairly clear, looking internationally—as we have just seen—that countries that have managed to take that approach from the outset, and have been able to mobilise capacity from the outset to do that, have fared better. There is a kind of double advantage to that, which is that obviously it is easier to maintain very rapid and efficient testing and tracing when the number of cases is relatively limited.

Q511 **Chair:** Can I ask you about timing issues? You have said that, if contact tracing is initiated too late after someone develops symptoms and is tested, it is not effective. How quickly does contact tracing need to

happen if it is to work?

Professor Fraser: Right from the first analysis we did of Covid, and which other groups did at the same time, we started looking at contact tracing for Covid. We found that, compared with similar viruses such as the SARS virus, or compared with the last epidemic where we analysed contact tracing, which was Ebola, you have a bit of time to do contact tracing. For Covid, the problem is that people start becoming infectious quite early during the course of infection. Typically, the incubation period is about two days before people develop symptoms, and that has been confirmed now in many published studies looking at transmission in contact pairs.

The time window from when somebody first develops symptoms to the people they infect starting to become infectious is about four days. You have about four days in total from the index case developing symptoms to get the message to people before they start infecting other people. If you look at data from other countries—for example, Hong Kong—you are doing well if people ask for a test within two days of starting symptoms, and then you have two days left for everything else to happen. During that time, you need to ask for a test, you need the test result to be logged and, if it is positive, you need contact tracing to take place. That is the ideal scenario.

Then the patient starts going through their infectiousness, so if you have a delay of two days beyond that, you have lost about a third of your contact tracing potential; with another two days you have lost another third; and if you wait six days, essentially you are contact tracing after all of the transmissions have happened, so anybody you find will have already gone through their infectiousness. A good way to think about it is that on average—there is variation—you have about four days to complete the loop from the person first developing generally quite non-specific symptoms to finding people through contact tracing. *[Interruption]*

Q512 **Chair:** The bell is indicating that the House of Commons sitting has been suspended; we do not have a vote. If there is a vote, we will have to suspend the sitting, but we are not expecting one before 4.30.

Can I spell this out, Professor Fraser, because I think it is a very important piece of data? What you are saying is that if you manage to isolate someone's close contacts within two days of them showing symptoms, so you have to do the test really fast and contact all their close contacts, you have a chance that you could stop their close contacts infecting anyone else. After that, if you take another two days, they will have infected a third of the people they might infect. If you wait as long as six days, they will pretty much have infected everyone they might infect, so the timing is pretty important.

Let me ask you about the importance of technology in this, because I know you have been involved in the development of the NHS app. We

heard from Vice-President Chen that the role of technology was not just about alerting people who had been near someone with coronavirus; it was also about tracking people's symptoms, so they would put into an app whether they had a fever, a cough or whatever it was. How much help can technology be in speeding up that process, and are there countries in the world that are doing it well that we should be looking at?

Professor Fraser: The countries that started using widespread apps were first China and then South Korea, where apps were used very widely in controlling the early phase of the epidemic. Those apps did not perform contact tracing, but they gave a lot of information and I think there was a widespread assessment that the information about the cases that was being given did not allow enough privacy. The focus that we looked at was automating the process of contact tracing. From early March, a whole series of organisations started looking at contact-tracing apps and converged on the idea that Bluetooth was the best way of looking at contacts between people.

The other thing to bear in mind is that, to be successful, it needs to be seen very much as part of a public health intervention, not as a separate tech solution. It needs to be integrated with the other activities that are going on so that it is seen as part of a package that includes social distancing, manual contact tracing, symptom reporting and outbreak response.

In terms of countries that have achieved very high coverage of contact-tracing apps, at the moment Singapore is reaching about 30% uptake, and Norway has achieved 30% to 40% uptake in the areas where they have been trialling the app. This particular technology is a new technology and, as we heard before, we need to build trust in the system. It was not available at the point when the initial large wave of the epidemic took place, and at this point in time contact-tracing apps have not been proven at a national programme scale.

Q513 **Chair:** It obviously was the intention that the app would be launched at the same time as the contact-tracing programme on 1 June. What is your understanding of why we have these delays? Do you have any sense as to when we are going to see the NHS app?

Professor Fraser: I think the intent is to release it as soon as possible, but to make sure that some of the learnings from the Isle of Wight pilot are fully addressed in terms of the functionality that people would like to see—the integration of the test—but for more details I defer to Baroness Harding.

Q514 **Chair:** So that I understand how it is going to work, if you have downloaded the app and you get a message saying that you have been near someone with Covid symptoms for 15 minutes or more, what are you supposed to do in that situation?

Professor Fraser: That is a policy decision. Essentially, we provided simulations where we looked at different options. One option is to wait

until you have a test result, and you only initiate contact tracing through the app at that point in time. Then you have a request to self-isolate, to quarantine, and that can be aligned with the request that would come through for manual contact tracing.

There has been discussion about an initial notification that could be given out before then, based on self-reported symptoms, which you could think of as a sort of amber warning that you have been in contact with somebody who has had symptoms. Maybe you should not quarantine at that point, but it would not be a time to visit an elderly relative or a friend who is in a vulnerable group. Maybe if you work in a care home that would be a time when you would not take your place. You could take some intermediate-level decisions.

Those policy options are still open for discussion. I think the initial version of the app that was piloted in the Isle of Wight focused on the initial report of symptoms, and now, in the next situation, the report will be on test results. The aim is to keep that as an open policy option, such that it could be used if there was a need to enhance the efficacy of the intervention. There is a concern about it, which is that, if you are reporting symptoms, obviously you will have more false positives, so there is a trade-off between the false positives and the ability to control the epidemic as much as possible.

Chair: Thank you very much indeed. I will bring in my colleague Dean Russell.

Q515 **Dean Russell:** Thank you for joining us today as a witness, Professor Fraser. I noted that one of your areas of expertise is around big data. I am part of the Joint Committee on Human Rights, and, recently, one big focus area was around the use of data from the app and concerns around its storage and future use even if it is anonymised. I want to get a sense from you of how it is planned to be used. Is there a detrimental effect in deleting all of that data at some point, when perhaps it could be used in big data modelling for future epidemics or pandemics as they occur in the UK?

Professor Fraser: It is an interesting question. For the intervention to be successful, the most important thing is for people to have trust in the system, and we have seen a very vigorous, and I think important, debate about privacy and the use of the data. While we are used to the idea that we often share data, the idea of having an app that shares new types of data in a health system is something that has led to a very substantial debate. However, if you look at the surveys—for example, Professor Carsten Maple performed a survey of opinions—it seems that there is a very strong majority, more than 50% of people, who support it. I think 82% of people support the use of the data for research in the NHS, but not for wider sharing with Government.

The rules around the data are that you should use the minimal data possible that are still able to give the information you need for the health

response, and there has been vigorous discussion about a decentralised model and a centralised model for that. The Information Commissioner's view is that you should start with a decentralised model and then see if there is additional justification for additional data around the social graph. To be clear, the information that has been regarded as sensitive is not the information that you would upload yourself about yourself; it is the fact that you have pseudonymised IDs, where contact occurred between the person who had this ID and a person who had that ID, and that that would be conducted at large scale.

Exactly the same consideration would be appropriate for future use of these data. It would be very helpful in terms of trust to have maximum transparency about who can and cannot use data that are regarded as sensitive or that are sensitive from a privacy perspective. If the appropriate degree of oversight from both Parliament and the Government and inherent to the organisation can assure people that there is trust in the system, analysis of the data would be useful in understanding the dynamics of transmission and how that links to people's contact patterns. To some extent, we are still discussing whether a contact should be 1 metre or 2 metres. We heard previously that some people have many contacts and some people have few. We do not understand how these things correlate with the probability of transmission at this point in time.

Q516 **Dean Russell:** Collecting that immense amount of data could help identify spikes. Do you happen to know how the data from the app is being linked to data from the wider track and trace methods—the manual methods and so on—and is that data being deleted? I am interested to know whether, because it is technology and via an app, we are treating it in a different way, through fear of data usage, than we do the wider methods. The reason I ask is that surely there is an element where fear about that data and the collection of that data—fear of privacy invasion—might mean that we miss opportunities to reduce spikes moving forward.

Professor Fraser: The answer to the first part of your question is that, with regard to integration, I do not know.

In terms of whether this is being treated differently, I would say so. In previous epidemics, I have analysed contact-tracing data on SARS, contact-tracing data collected on Ebola, on MERS and on the H1N1 flu pandemic. It was considered standard research data and led to immediately actionable information.

I guess at this point we are seeing two domains come together. There is the domain of public health surveillance, where it is widely understood by everybody that you are collecting data in order to save lives and to improve the epidemic control. It also allows people to get on with their daily life, getting exactly the information they need for that to happen while reducing the risk of transmission. Then there is digital surveillance, which is linked to a whole different debate.

There is an interesting meeting of those two different perspectives. That is an ongoing discussion that needs to be had to ensure that the data are used, as they can be used, to improve our epidemic control, both directly through the act of contact tracing and through learning from it, learning quickly about transmission in a way we cannot do through other tools. But as it links to that other world of digital surveillance, where there are concerns, it is important that there is transparency, to make it clear that all of the analysis is taking place within the world of public health surveillance, and health more generally.

Q517 **Laura Trott:** Professor Fraser, you mentioned earlier, in response to a question from the Chair, learnings from the Isle of Wight pilot. Are you in a position to tell us what some of those learnings have been?

Professor Fraser: I am a scientific adviser. I gather that a report will be circulated soon, and I am not in a position to comment on that.

What I can say is that on the uptake figures there has been some uncertainty with counting. Some people cannot download it on the Isle of Wight, and people are installing it, uninstalling it and not using it. There is an understanding that about 55,000 people or thereabouts have been using the app, which is pretty good coverage, given the age distribution and the distribution of smartphone usage.

Original information is that it was installed and worked on most people's phones. I think some of the learning is that there was a strong desire that the app should be better linked to testing. That is under very active consideration for the second release of the app.

Q518 **Laura Trott:** Thank you. It is helpful to know that there will be some analysis forthcoming, and that might be something we pick up with Baroness Harding in the next session.

You recognised the point around policy choices needing to be made for next time round. You referenced the analysis of reporting symptoms versus having a confirmed test. Are there any other policy choices that you feel need to be made before the app is launched?

Professor Fraser: At the moment, both versions of the back end of the app are being developed. There is the original NHS development and, as of fairly recently, Google/Apple have offered a different back end. I am not sure. That is a policy choice that can be addressed at a point in time.

The policy decisions now are much more broadly how to encourage people to test even on relatively mild symptoms. The issue of testing people who have received a quarantine request is interesting, because there is an issue of capacity. If the ONS data, with wide confidence intervals, told us that there were something like 6,000 to 8,000 new infections a day, and if we were to ease the lockdown and start to move towards out of lockdown time, with a mean number of contacts typically reported per person being of the order of 30, there would be a capacity issue about testing those contacts, because that is 240,000 people per

day. We are not at that stage now because we are in a social distancing stage, and I think we are going to have to keep some social distancing for the foreseeable future.

Some of those tests are not fully sensitive because it depends on the timing of infection. There are some benefits; you can recursively contact trace again because we know that some people have quite mild symptoms. Contact tracing is an opportunity to find people with relatively mild symptoms.

The other policy consideration is that there has been a lot of talk about the volume of tests. It has been very encouraging as an observer and an adviser to see the increase in volume of tests, but, as we discussed at the beginning, the importance of the need for speed, looking at the turnaround time of tests, is also very important.

Laura Trott: That is very helpful.

Chair: Thank you.

Q519 **Barbara Keeley:** To clarify, Professor Fraser, in terms of policy options you said that for the roll-out of the app one option is self-reporting or moving to testing, and you have just talked about the drawbacks as whether we have the capacity for testing once out of this level of social distancing. Could you run through that a bit more? What is the balance? Is it that we have now moved to say that it is preferable to do testing? What are the factors in self-reporting?

I wondered if there was over-reliance in the earlier stages of the pandemic on three symptoms—fever, dry cough and shortness of breath—when actually there is a whole range of symptoms. In care homes, they talk about symptoms such as tiredness and muscle ache being much more what they see than necessarily a dry cough and the other symptoms. What is the balance there?

Professor Fraser: Speaking on the choice of symptoms is outside my field of expertise. I think there have been some good clinical reviews of that.

I would make the point more broadly that a lot of the thinking is about sensitivity and specificity. Some of the symptoms are more specific; anosmia, the loss of taste and smell, is very specific to Covid, but if the aim is to find as many people as possible and to trace their contacts, as I think it should be, you might want to err towards more sensitivity and include testing people who have fairly non-specific symptoms.

Some estimation needs to be made as to how many people that results in, relative to the existing test capacity. As we move to test and trace, the more general point is that we need to encourage people to get tested. We have seen a recent increase in the symptoms that would make you eligible for that, but going back to the point about speed, we need to be testing people quickly during the early phases of infection, which tend

towards the slightly more non-specific test. As to what exactly the correct choices are for that, I defer to other clinical colleagues.

Chair: Thank you. Barbara, do you want a quick follow-up?

Q520 **Barbara Keeley:** Yes, I want to get a sense of the balance. It seemed to me that you were saying we need to move towards testing, but perhaps the issue is just capacity. I know the Chair feels quite strongly that we need tests coming back within 24 hours. Is that the hold-up? Is that the thing we have to fix? Is that what we have to solve?

Professor Fraser: I think so. In reporting our testing capacity, we need to look both at the numbers per day and what the turnaround time is. There are all of those delays. You need to shorten all of the delays. It is how long there is between a person first developing symptoms, requesting a test, how quickly you can turn around a test, and then how quickly you can do the manual contact tracing.

You have to ensure that people have trust, confidence and an understanding of the process such that when they are contact traced through a phone call, through human-led contact tracing or through app-led contact tracing, the messages are clear, and people have confidence that it is fair and equitable that they are asked to quarantine, which is not going to be easy. It depends. It is easy if you can work at home.

Chair: Thank you, Professor Fraser. Other people wanted to ask you questions, and I am very sorry that we have not had time to get to them, but we have really appreciated your answers to our questions this afternoon.

Examination of witness

Witness: Baroness Harding.

Q521 **Chair:** We are looking at the new NHS Test and Trace service. Then we will be going on to the issue of protective equipment. I welcome our next witness, Baroness Dido Harding, who is in charge of NHS Test and Trace, which was launched at the start of last week. A very warm welcome to you, and thank you for joining us this afternoon. Congratulations on getting the service up and running.

Could I start by asking you for a few bits of data, to give us a clue as to how well it is going? Since you have launched, what is the proportion of new Covid cases that have been contacted by a clinician within 24 hours?

Baroness Harding: Thank you, Chair. Perhaps I could first give a little bit of context and explain why I am probably not going to give you the answer that you would like.

This is a service that is only six days old. As Vice-President Chen said in your earlier session, building trust in NHS Test and Trace is going to be absolutely critical. We need to make sure that any data that we share is accurate and validated.

You will have seen an exchange of letters between Sir David Norgrove, chair of the UK Statistics Authority, and the Secretary of State for Health over the last couple of days. I spoke to Sir David yesterday. We have agreed that our teams will now work together to agree a weekly dashboard of data for the overall end-to-end test and trace programme. We are working really fast to get that, and we aim to publish it both nationally and at local level, but I do not have that data yet today.

It is really important that the data we share is validated. As I am sure you appreciate, this is a very new operational service that touches hundreds of thousands of people. It is important that we make sure that we share accurate data. I am very happy to give a flavour of what we have been learning over the first six days, but I do not have those statistics at a level that I think would pass the test of our UK Statistics Authority as we stand today.

Q522 **Chair:** I have to say that I am quite disappointed with that, because we gave you notice of these questions. I would like to probe and get as much of a flavour as I can. This is a House of Commons Select Committee. We were told when the service was launched that it was going to be a world-beating system. I do not think it is unreasonable for us to ask quite simple questions like, "What proportion of new Covid cases have been contacted within 24 hours?"

Could you give us a flavour? Are you getting more than 80% of them? We have been hearing that lots of contact tracers have been sitting idle, so presumably there is no capacity shortage. What sort of proportion are you getting?

Baroness Harding: I am very happy to give you a flavour, but I think it is really important that we give you validated data. I do not think there is any citizen service of this scale that would launch and within six days share 24-hour turnaround data. We will get to it really quickly.

Q523 **Chair:** When will we get the data?

Baroness Harding: I very much hope that we will start to publish a weekly dashboard from next week. It will not have all the data that you and others would undoubtedly like. No one wants to have the data in the public domain more than I do, not least because I firmly believe, as your previous two witnesses said, that to make the service work all 60 million of us need to play a part. The most effective way of us all doing that is if we all know where we stand in terms of the spread of the infection and the success of the test and trace service. You will have it as fast as possible.

Q524 **Chair:** I understand that, but do you also understand the counter-argument? Not sharing with us very basic data, such as how many people are being contacted within 24 hours, might destroy confidence in it. It will make people think that the reason the data is not being shared is that it is not terribly good.

Baroness Harding: It is a six-day-old service. Therefore, there is work to do to make sure that we validate the data sources we have. Let me give you a flavour—

Chair: Go on then. Let's have the flavour.

Baroness Harding: We are working with the Statistics Authority to make sure that the data is good enough for them to be comfortable with us publishing it. They have been uncomfortable with what has been published up until now.

Q525 **Chair:** It is a good line, so let us have the flavour.

Baroness Harding: It is hard to please both. Let me give you the flavour. There are some things that have surprised us. First, the vast majority of people we are contacting and asking to isolate are very pleased to. We have had some lovely stories. Initially, a number of our contact tracers were very nervous that they would have a series of difficult calls. Instead, they have been having really positive calls. One example was an individual who said that they had been about to go out to a family barbecue, which had recently been allowed, but now that they had spoken to our contact tracer they did not want to put their friends and family at risk, so they stayed at home.

We are seeing a significant proportion of the people we contact—we contacted thousands of people in the first six days—being very keen to follow the guidance. As your previous two witnesses said, the actual conversion that we are most concerned about is from people having symptoms to them ordering a test. If they do not enter the test and trace system, we cannot deliver our part of the bargain in making sure that we identify their contacts and ask them to self-isolate within 48 hours.

If you look at the latest ONS statistics, which were published last week, the ONS's central estimate is that there are roughly 8,000 people contracting Covid every day. Yesterday, we had approximately 1,600 people having a positive test. We have excess testing capacity and we have excess tracing capacity, so capacity in the system is not the issue. What we need to do together, as a society, is encourage everyone, if they feel ill and they have a cough, a fever or have lost their sense of taste or smell, to order a test. They should self-isolate immediately and order a test.

Interestingly, in some polling from last night, only 44% of adults contacted knew that all adults were eligible for a test. Maybe that is not surprising, because the eligibility for tests was only extended to all adults two and a half weeks ago.

I will work through all the process—the end-to-end service. What we know is that not enough of us are ordering a test when we do not feel well. I need to get more people into the tracing system. Once we get people into the tracing system, remember that it is a multi-channel process. You get your positive test result back, and you are asked by a

text message to log on to the NHS Test and Trace website to start to register your contacts.

One thing we have discovered is that a higher proportion of people than we were expecting are self-serving. It is about 25% of people roughly. It changes hugely day by day, and I hate giving any number because I know that after six days—

Q526 **Chair:** We know that you do not like giving us numbers. We have got that message.

Baroness Harding: I just do not think it is helpful; people move a lot. It was more than we were expecting. Let us say that 25%, or a third of people, are self-serving. That is one of the reasons why our contact tracers are not as busy as we had been expecting. More people are serving themselves online and giving us their details. That is also true for the contacts themselves.

Q527 **Chair:** There are many people who want to ask you questions, and I want to bring everyone in. On the question of data, could I ask you to write to the Committee before the end of next week? I will tell you the things that we asked you in advance of today's hearing to come armed with that you are not going to tell us, but we would like to know them by the end of next week.

How many people are contacted within 24 hours when they have tested positive? What proportion of people? What proportion of people are willing to share their close contacts? How many of those close contacts are then contacted by the call centres within the following 24 hours? What is the compliance rate with self-isolation? Those are the four bits of data that we would like. Would you write to the Committee and give us that data by the end of next week?

Baroness Harding: I am delighted to say I will do that, with only one proviso. I want to make sure that the UK Statistics Authority is happy with the data I send you.

Chair: I understand that.

Baroness Harding: There may be some gaps, but otherwise I am very happy to send that and for it to be made public.

Q528 **Chair:** There are lots of people who want to come in, but there are two very important things I want to ask you before they do. The first is this. Let me read you the SAGE minutes that have now been published from 1 May: "SAGE agreed, with high confidence, that for the test and trace system to be effective, isolation of contacts of individuals with Covid-19"—needs to happen—"within 48 hours."

Obviously, that isolation cannot happen if the test result itself takes 48 hours, as we were hearing from Professor Fraser just now. How quickly are the tests being turned around at the moment? What proportion of tests are coming back within the 24 hours that Professor Fraser just told

us was essential and that we know SAGE thinks is also essential?

Baroness Harding: Again, I can give you broad averages. They have not yet been validated. I am sorry to keep giving the caveat. As we stand at the moment, over 90% of all tests come back to the individual within 48 hours.

Chair: We know that one, yes.

Baroness Harding: Looking at the different channels, if you go to one of our drive-through centres—our regional test sites—or if you are tested—

Q529 **Chair:** We know that the majority of those are within 24 hours. What no one wants to tell us is the overall proportion of tests that come back within 24 hours.

Baroness Harding: I do not have that yet.

Q530 **Chair:** You must know that; that just cannot be right. Are you saying that you do not actually know how many tests come back within 24 hours? You are in charge of NHS Test and Trace.

Baroness Harding: No, I have not had the data validated by the UK Statistics Authority.

Q531 **Chair:** So you have data, but it has not been validated.

Baroness Harding: I have not had the data validated by the authority, which has expressed concern over previous testing data not having been validated.

Q532 **Chair:** Will you write to us within a week with validated data as to what proportion of tests are coming back within 24 hours? You are very willing to tell us that 90% of tests are within 48 hours, but no one wants to tell us how many are within 24 hours, which is what we have just heard from Professor Fraser is so important. Will you write to us and tell us?

Baroness Harding: Provided that the quality of the data is good enough. I am sorry to be boring. What I do not want to do, with a service that is only six days old, is to launch with data that people then lose faith in.

Q533 **Chair:** We are saying within a week.

Baroness Harding: Provided that the quality of the data is good enough. That is all I am saying. I fully expect to be able to do that, but I do not want to give you false assurance.

Q534 **Chair:** My final question is on a different topic, which is false negatives. I know that is a big issue. As I understand it, at the moment, the guidance is that, if you call in with symptoms and your test comes back negative, you and other household members no longer need to self-isolate. But we know from Bristol University and Johns Hopkins University that up to 20% of test results are false negatives. They are people who actually have Covid, but the test says they do not. Why does the guidance not then ask those people to have another test?

Baroness Harding: That is really a question for the medical and scientific experts, for the chief medical officer. My job is to take the scientific and medical guidance that SAGE and the CMO set, and deliver an operating system and service to meet those requirements. We all recognise that there was error in the testing system, but the current guidance is exactly as you have set out, and that is what we are building a service to deliver.

Q535 **Chair:** Could you ask them why the advice is what it is, and then write to us, with your ream of other letters, with the explanation as to why people are not offered a second test if they have tested negative? Obviously, we do not want people going back into the community if they could be spreading it.

Baroness Harding: My understanding of the guidance is that, after having a negative test, you and your household are free to go back into normal life. But if you continue to feel unwell after a couple of days, we would advise you to stay at home and take another test in a few days' time. We are not short on testing capacity. I want people who are not feeling well to feel really confident that they can order a test.

Q536 **Dr Evans:** I would like to follow up on the Chair's question about false positives and false negatives. I take your point, but do you happen to know the values of false positives and false negatives? Do you accept the 20% for the swab tests?

Baroness Harding: Remember that I am not a clinician or a scientist, but, as I understand it, there are a number of different studies, and quite a wide range of those studies suggest that the range could be between 2% and 20%. I do not think that there is the precision in the scientific evidence that we would all like there to be.

Q537 **Dr Evans:** I was pleased to see the Government set very high sensitivity and specificity for the antibody test—above 98%. Do you have any false negative or false positive numbers on that test?

Baroness Harding: No, I am sorry, I do not. That is very early days as well.

Q538 **Dr Evans:** The reason I ask is that, in the press release on the website on 7 May about your position, it talks about you being responsible for immunity certification. Can you tell me a little more about what that means and entails? Where do you foresee it going?

Baroness Harding: Yes, of course. One of the things that all of us who are lay people in this want to be true is that, if we have been unlucky enough to be ill with Covid and then have antibodies, we want to believe that that will confer immunity for us and enable us to get on with our lives. As I understand it, the reality of the science today is that the scientists do not think that they can give us that reassurance. That is partly because there are not enough people who are known to have

antibodies, and have had them long enough, for us to be confident that they really confer immunity.

If the science develops over the course of the next few months or over time—I do not know how long—and the scientists are able to tell us that a certain level of antibodies in your bloodstream confers immunity for a certain amount of time, that might give the potential to free people to live their lives in a more normal way. That is true across the whole world, and everyone I talk to across the public and the private sector desperately hopes that the science will give us that freedom, but today the scientific evidence is not there yet.

Q539 **Dr Evans:** Would you foresee, and are your team looking at, passports or certificates that people carry around with them and the policing of that? How would that look, if indeed the science backs it up?

Baroness Harding: It is early days to be leaping there. At the moment, the focus of the team is more on supporting the research community in putting in place studies, both nationally and globally, to get the evidence base to understand exactly what immunity we might have, based on various tests. We are building optionality so that as the science evolves we might be able to find ways of freeing people up. It is early days for those sorts of ideas.

Q540 **Dr Evans:** I appreciate that. Thank you for the comment.

There is a practical issue. I was speaking to police forces in my local area of Leicestershire. One of the biggest things they are worried about is malicious use of track and trace—for example, if someone who tests positive for Covid rings in and tracks and traces the police. The police work with many other colleagues in cars and so on, so you could take out a significant proportion of police officers by doing that.

Are there any thoughts or mitigations for the police? Indeed, you could argue that it could be used against parliamentarians as well. Are there any ways to mitigate the system, and thoughts about the track and trace system? You would hope that the British public, if they got a call, would self-isolate for 14 days if they had been in contact with someone who was positive.

Baroness Harding: First, that does not fit with what we are seeing so far, either in public attitudes or in the responses that our contact tracers are seeing. If you test positive and you put your information online, that online information is screened as well, to make sure that we identify complex cases. If you put on the online form that you work in health or social care or in a prison, for example, it will immediately be escalated to specialist health protection teams in the local area.

It would be quite hard to effect the sort of scam you are describing. I am not saying that it is impossible. We are taking fraud seriously at all stages in the process, but in the end the whole system is based on societal trust. The way that will enable all of us to get back to living a more normal life

is by all of us following the basic rules of NHS Test and Trace. The early evidence is that that is what is happening.

Q541 **Dr Evans:** There has been a lot of talk in this Committee about the app and how that fits in. What weighting is there towards actual physical contact tracing, and, indeed, when the app comes in, do you see that working? They are clearly hand in glove. For example, we track chlamydia through contact tracing, calling people up and saying, "You have had contact." That seems to work.

Where do you see it going? Many people do not have a mobile phone. The media reported the app as an integral part. Is that the case? If not, where do you see the percentage being involved in tracing?

Baroness Harding: Maybe I would say this, given my background as a retailer, but I see it as a proper multi-channel service. One of the learnings from the Isle of Wight has been that actually having local community engagement and human contact tracing is the bedrock of this. I see the app more as the cherry on the cake than as the cake itself. It will speed things up, as Professor Fraser said, but you need the bedrock of the end-to-end testing and tracing service for the app to be able to do the speeding up of it. That is the one of the reasons why we launched the NHS Test and Trace service nationally before the app. We need to embed that and trust in the service.

That is not to say that the app is not going to be very powerful. It will be in speeding things up, but remember that there are 8 million people in this country who do not own a smartphone. It is important that we build a service that is accessible to everyone. The app is not the core of it; it is a part.

Q542 **Sarah Owen:** Baroness Harding, I was going to ask some questions that would have led to some data and statistics, but given that they are not going to be coming I will ask this. We have seen the disproportionate impact that Covid-19 has had on black, Asian and east Asian communities. How many, or what proportion, of the contact tracers that you have are from the BAME community? Why was the app trialled in the Isle of Wight, which is 97.3% white? What can you learn about how best to communicate with ethnic minorities, given that trial?

Baroness Harding: Let me take the second part of your question first. The app was trialled in the Isle of Wight because we needed a location that was geographically distinct. The population of the Isle of Wight have been fantastic, and I would in no way wish to suggest otherwise, but it was about the physical geography of the island rather than the population.

You are absolutely right that, in giving us insight into how you access and inspire the broad variety of communities across the country, the Isle of Wight on its own is not going to do that. None the less, what the Isle of Wight taught us is that local community engagement is critical.

To answer your first question, I am actually rather embarrassed to say that I do not have the information, but I will get it for you and send it to you as soon as possible. On the way we have recruited our contact tracers, over 7,500 of them are returning clinicians—doctors, nurses, dentists and other allied health professionals. I assume, given the fantastic diversity in the NHS workforce, that a significant proportion of them will be from ethnic minority communities. The NHS workforce as a whole are very representative of the population, so I would assume that to be the case but I do not have the information. I will get it to you very quickly. It obviously needs validating, but that should be quite easy from the HR systems of our partners. I will share that.

I completely agree with you about the importance of building a service that really works for everyone. It is one of the reasons why the Government announced 10 days ago additional funding to help local government build their local test, trace and contain maps. The way we will stamp out Covid in local communities is through local communities working together. It is important that we are providing that funding, but also that we do not think we are building a system that is entirely national. This is as much about local action and human engagement as it is about the national and the technology. We all need to play our part in the system.

Q543 **Sarah Owen:** Thank you, Baroness Harding. Given the fact that we see that black men and women are four times more likely to die, and British Pakistanis are twice as likely to die, I find it a little more than just embarrassing that you do not know how many contact tracers you have from the BAME community.

With regard to the local government side of funding, Luton Council is staring at a £49 million black hole when it comes to its finances because of Covid-19. How satisfied are you that local authorities are being given the necessary funding to track, test and trace effectively?

Baroness Harding: It is important that we are providing direct funding for health protection teams in local authorities and in Public Health England. I am encouraged by the reaction we have had from local government across the country that that funding is very welcome. We are expanding health protection teams locally. I expect them to continue to expand, and I would not be at all surprised if we were to continue increasing the funding as those teams expand over the course of the next few months.

Clearly, the overall funding of local government is well beyond my brief. I can only tell you about the funding for the Covid containment work in those health protection teams. I am afraid I cannot comment beyond that.

Q544 **Rosie Cooper:** My question was going to be about how the public can be assured that contact tracing is safe for them, and their details. In your answer to Luke, you said that you were taking fraud very seriously.

Actually, fraudsters appear to be light years ahead of the NHS fraud information, which to my mind seems about 20 years out of date.

You cannot even verify that the call you get from NHS Track and Trace is genuine. You cannot follow the advice that your bank would give you: "Put down the phone, phone the number and you will get through." We are not even able at that level to reassure people. It would be awful if people were duped and lost their life savings if they thought, unlike Mr Cummings, that they were doing their civic duty. Trust would be absolutely and fundamentally eroded if people were duped into trying to help, but lost money. What does "taking fraud seriously" mean in this regard? What are you actually doing?

Baroness Harding: Let me take you through it, Rosie. We understand that people will be very cautious about discussing clinical details over the phone, and, sadly, will be wary of criminals looking to capitalise on this national effort.

First, contact tracers will never ask anyone for financial information such as credit or bank details. They will never do that. If the public are concerned about whether a call or an email they have received comes from NHS Test and Trace, they can visit gov.uk and they will see a page that lists the official phone numbers used by the service.

If someone does not wish to talk over the phone, NHS Test and Trace can offer to send an email or a text, inviting them to log on to our web-based system. It is important to remember that, as I said, we will never ask you for your financial details, your PIN numbers or your banking passwords. They will not visit your home.

While it is possible for criminals to fake an official phone number—sadly, I know that—they cannot fake official website addresses. We encourage anyone with concerns about a phone call, a text message or an email that they receive in relation to NHS Test and Trace to check the website address being provided to them carefully. If possible, they should type in the official address—I can send it to you, if that is helpful—followed by the unique characters that they will have been given by the service.

If people think they have been sent a scam message, we need them to report that to Action Fraud. If people receive an email they are not quite sure about, they should forward it to the National Cyber Security Centre's suspicious email reporting service. They can report a spam text to Ofcom's spam texting service. We will keep expanding all of those things. We are trying to be very public about how we can all protect ourselves.

I am not going to pretend that this is perfect. Unfortunately, there will always be a tiny proportion of society who try to take advantage of people who are in a vulnerable position, but there is a lot we are doing that will enable us all to stay safer.

Q545 **Rosie Cooper:** In your earlier answer, you talked about the number of people who do not have smartphones and are not IT savvy. All of that will

be almost beyond them. Why we can't have a phone number that they can phone and check is beyond me.

Baroness Harding: They can. They can ring 119.

Q546 **Rosie Cooper:** That's great. Thank you for that information.

Vice-President Chen was clear that their success in Taiwan was based on trust, which in itself was based on competence. That has not exactly been at the forefront of our work to date. I acknowledge that this is not your mess, and I hear that you have brought great energy and intelligence to the task.

Again, going back to security, I want to ask a couple of questions relating to the data. Who exactly has access to that data? Who has access to who has had the test? You get a follow-on survey after that, so who has access to that survey? Are there any other Government Departments, agencies or indeed anybody else outside the NHS who have access to that information?

Baroness Harding: All of the data is compliant with GDPR—the general data protection regulation. Public Health England holds the contact tracing data. This is a very standard part of Public Health England's operating model. They have used personal information from contact tracing for a variety of diseases and have done for a long time. That is set out in the GDPR legislation specifically. We take data protection extremely seriously. We have been working with the Information Commissioner, the National Cyber Security Centre and others to keep stress testing, to make sure that people's data is safe.

This is an operating citizen service that is six days old. It is already larger than most of our online food delivery businesses. It employs over 40,000 people directly and indirectly through a variety of different partners. I know that we will not get everything right all the time, but we are determined to be open and transparent in the way we operate. I absolutely give you my word that we will share all the data when it is validated. We will make sure that over time we build the trust that the public need to have in us.

Q547 **Rosie Cooper:** Will you confirm that nobody outside the Department of Health—no other Government agencies or Government Departments—has access to the information you are collecting?

Baroness Harding: As I understand it, yes.

Q548 **Barbara Keeley:** I want to go back to some of the detail on the policy options. First, why are we not legally mandating self-isolation? Clearly the six-day experience you talked about is good, but if we have only had 1,600 people with positive tests in that time, it is not an acid test. We heard from Vice-President Chen that in Taiwan they have a legal mandate for quarantine and a financial subsidy.

I have heard, for instance, of somebody sent home from a care home to

self-isolate after a positive test and told she had to take two weeks' holiday for that. We have those issues. If we cannot make it financially secure for people and we are not legally mandated, those seem to be weaknesses. That is the first point. Why are we not legally mandating for it?

Baroness Harding: I am sorry, but your internet connection cut out for me right at the beginning of your question. I think I heard you asking about why we are not legally mandating and what support people are legally entitled to if they are asked to self-isolate. Is that right?

Chair: Yes, that is right.

Baroness Harding: If it is possible for people to amend their working practices and work from home while self-isolating, they should do so. If it is not, statutory sick pay is available to employees who have been contacted by NHS Test and Trace services. In the example you described of someone working in a care home, they are eligible for statutory sick pay.

If people are not eligible for statutory sick pay, they may be able to claim universal credit or the new-style employment and support allowance. The other—

Q549 **Barbara Keeley:** Let me interrupt you, before you go any further. Let us be realistic about the amounts of money. People might be in a situation, depending on what their job is, where this happens to them more than once. We do not have a legal mandate, and we are talking about people possibly having to latch on to universal credit.

Baroness Harding: I absolutely understand people's concerns about its happening more than once. The thing to bear in mind is that this is a service that is going to encourage all of us to be better at social distancing and basic hand hygiene. As the professor and the vice-president said, you should not think of test and trace as a sort of silver bullet on its own. If you have been social distancing—if you have not been within 2 metres of anyone outside your household for more than 15 minutes—you cannot be a close contact. Therefore, you cannot be asked by NHS Test and Trace to quarantine for two weeks.

This is going to put considerable focus on all of us as individuals, and on all employers, to implement the safer working guidance that BEIS has issued. If we all practise social distancing and good hand hygiene, we reduce the rate of infection, but we also protect ourselves as individuals and as employers. That is the best way to prevent the situation you describe of someone being asked to isolate multiple times.

Q550 **Barbara Keeley:** Can you say how the policy will affect key workers, because that is a concern? In my local authority area of Salford, we have very high levels of outbreak in our care homes. It is quite possible that a care staff member, a low-paid staff member, will end up being asked to self-isolate again and again.

Baroness Harding: In complex high-risk environments, such as health and social care, that is exactly why personal protective equipment is so important. If you are wearing the appropriate personal protective equipment, again, it does not count as a close contact.

Looking to Lord Deighton later in your evidence session, it is very important in health and social care that we protect people in higher risk settings. It is also why, in both the NHS and in social care, both systems are testing staff, patients and residents. You are looking to find anyone who has the disease but is not showing symptoms, again to make safer working environments.

Chair: We have to leave some time for Lord Deighton, who is waiting in the wings, on the very important issue of protective equipment. There are two final questions.

Q551 **Laura Trott:** Baroness Harding, Professor Fraser talked about some learnings from the Isle of Wight pilot. Can you talk us through what they were and confirm that you will publish something relating to it?

Baroness Harding: Yes. We will be publishing more detailed learnings. There will be a full evaluation published very soon, but I can give you a few of the highlights.

The first thing is that the feedback from residents on the island has been extremely positive. As the professor said, there will be some noise in the data. You have to put in your postcode, so, provided they were honest about their postcode, over 50,000 people in the Isle of Wight downloaded the app. There were quite a few people who were not on the Isle of Wight who also downloaded it. Engagement on the island has been very strong.

The big lesson, as I said earlier, is that local community engagement from civic leaders, the health system—both the NHS and social care—and from businesses has aligned around the importance of, "If you have these symptoms, report them, order a test and give us your contacts." The app has brought to life the importance of the whole NHS Test and Trace system. That has been a really big lesson.

The professor mentioned a number of these things. The first prototype that we are trialling in the Isle of Wight is cued and linked to symptoms, whereas we know we need to build in the functionality linked to a test. It is an absolute high priority to make sure that it is linked to the test and helps to speed up the ordering of the test in the same way as it speeds up the identification of contacts. What we have been learning in the Isle of Wight is very encouraging.

Chair: Thank you. Finally, last but not least in this section, Taiwo.

Q552 **Taiwo Owatemi:** At the moment, the Government appear to have a capacity of 200,000 tests. Baroness, can you explain what the testing capacity would need to be in the country to make test, track and trace successful?

Baroness Harding: At the moment, we have excess testing capacity. Right now, I am more concerned about making sure everybody knows that they can get a test if they need one. The testing capacity is ample for where we are today. As we look ahead towards winter and to more people with flu-like symptoms, which are very similar to Covid symptoms, it is going to be important that the testing platforms continue to expand.

I want to make sure that we are focusing in the round. As the Chair said early in the session, the speed of turnaround for testing is arguably much more important at the moment than increasing capacity. As we get ready for autumn and winter, we are going to need to expand capacity, speed up time and improve the reliability of testing. As we look at a fuller data dashboard, I want us to measure all those three things and not just one of them.

Chair: Dido Harding, thank you so much for joining us. I hope you understand that our frustration is that it is very hard for us to scrutinise what the Government are doing if we are not given the data that allows us to do that. I am grateful to you for joining us, and for the ream of letters that you are going to send us in the next week, which we look forward to very much indeed.

Examination of witness

Witness: Lord Deighton.

Q553 **Chair:** Our final witness this afternoon is Lord Deighton, the Secretary of State for Health's adviser on protective equipment. Thank you for being patient. I am sorry it has taken a bit of time to get to you, but we really appreciate you joining us this afternoon.

Lots of my colleagues want to come in, so I am going to be very brief. Could you outline exactly the job you are doing for the Government?

Lord Deighton: Thank you, and good afternoon. I volunteered about six weeks ago. I was initially asked if I could get UK manufacturing up and running to support the PPE effort. After about a week, the Prime Minister called me and asked me to oversee the entire effort. My job is to stabilise the current situation with PPE and to put some resilience into the supply chain so that our frontline workers can get the PPE they need and can focus on their job of saving lives.

My focus over those six weeks—those of you who have been in crisis situations will understand how this works—was, first, to get a very clear read on the data so that I really understood what we needed and what we had coming in. That allows you to identify where the gaps are. Then I looked very closely at our buying efforts to make sure that we were focused on where we could get volume supply, where there were shortages. We do that on the basis of a seven-day time horizon and a 90-day time horizon. I also got going on making it in the UK, where there

were big holes. I think we have now stabilised the situation to the degree that we are confident in our seven-day horizon and our 90-day horizon, so we expect supply to meet demand.

There will be stresses from time to time as a delivery is late or shows up and is not quite what you hoped it would be. We need to manage through those stresses, but broadly speaking my focus is now on managing the risk in matching supply to demand, and putting more and more resilience into our buying efforts by concentrating on where the big suppliers are, by diversifying geographically beyond the Chinese market, where we were totally focused initially, and by scaling up UK manufacturing. We have had a wonderful response, in particular from SMEs. We have 1 billion items coming in the next 90 days and 1.5 billion coming in the 90 days after that.

We have completely met the gap we would otherwise have had in aprons, for example. British plastic bag manufacturers have repurposed their factories and scaled right up; 3D printers have started producing visors for us; and a number of big mask manufacturers are coming into play. A combination of the private sector coming together and meeting our health sector's need has been very powerful.

The other thing I have been trying to do is to take the kinks out of the logistics system. Essentially, the team put in place an emergency response to airlift equipment out of China, bring it to the UK and then distribute it to the point of need very efficiently. Over time, I am trying to turn that into the kind of supply chain that a good, fast-moving consumer goods firm would manage—to make sure it has complete line of sight of what is coming in and absolutely knows every corner of every piece of demand for every piece of kit, so that the two are perfectly matched.

In broad terms, Chair, that is the task and where I have been focused for the last few weeks.

Q554 **Chair:** That is very helpful. I want to ask you about some of the evidence and comments that we have had about PPE to this Committee. Even in recent days, there are hospitals that say they are being supplied with four or five different types of FFP3 masks that all need different fit testing. PPE has had to be recalled after distribution. Staff are being asked to use expired PPE. Care homes still say that they are paying massively over the odds for their PPE equipment.

We know that you are completely new to this, but could you give us some idea of timescales? Are we a month away from you being confident that we will have the solid supply we need if there is any kind of second wave or outbreak? Is it a month or two months? Give us some sense as to how long it will be before you are reasonably confident that frontline workers will not have to worry.

Lord Deighton: Of course, that is the principal question. I referred earlier to the way we plan on a seven-day basis and a 90-day basis. We

have supply to match demand. What I am trying to do is to take the risk out of that. As each day goes by, it will get more and more secure. The big picture has put us in a position where we have the supply to match the demand. The demand we are looking at is a fully modelled NHS restart demand that should service the entire requirement of both the health service and the social care system.

We have a distribution system in place, so, if any of the hospital trusts get below 72 hours of supply for any item, it is immediately resupplied through our 24-hour hotline. We have stocks positioned to do precisely that. It builds confidence day by day. I am sorry, but I would not put it as a particular day. Everybody will see an improving situation as each day goes by.

Q555 **Dean Russell:** Lord Deighton, what you have just shared sounds like an excellent progression with regard to PPE. My question is broader. A couple of months ago, at a Select Committee, I used the analogy that during the war my Nan helped build Spitfires. At the time, I said, "Why aren't we getting armies of volunteers, perhaps even students, to start to create PPE, to protect our frontline?"

This is the bit that I am unclear on. Obviously, we now have these brilliant partnerships with business and so on, but 750,000 people signed up to be volunteers through the GoodSAM app. Some of those people, perhaps many thousands, have not been needed, which is great, but is there still an opportunity to do two things? The first would be to use all those people who have perhaps been furloughed or would happily volunteer, or sadly have lost their job, to be part of the national effort to create PPE.

Secondly, the other part I find very odd is the continued reliance on China. Surely, there is a commercial opportunity for us to become a global hub for PPE, so that we are not just supplying our own demand but potentially supplying demand elsewhere in the world. I would be keen to get your thoughts on that and about why we have not done it so far.

Lord Deighton: Those are two good questions, which I spend a lot of time thinking about. Let me take the second one first, on how we diversify away from our reliance on China.

You are exactly right. My objective, and my plan, is to build more resilience into our supply chain. Diversifying away from that reliance is a key part of the plan. I am working extremely closely with the Department for International Trade to make a local plan that identifies every country that can make PPE. We are now in contact at diplomatic level and individual company level to find out exactly who can be our suppliers over time.

The other element of diversification, of course, is having UK companies up and running to help and support us. What has been interesting for them in the medium term is whether we can be price competitive in some areas. At the moment we are, because the spot price has inflated so

much that we are in a position to give them six or 12-month orders, which enable them to make a profit, invest in machinery and scale up. We may in the medium term have an arrangement where they are put on standby, so that they are, effectively, surge capability that can come in if we have problems with other sources of supply.

We are looking much more carefully at reuse so that we reduce demand. You can sterilise goggles and use them again. Gowns can be made of a material that is washable. That is all entirely consistent for me with a world in which we are more focused on sustainability. We have to have a set of trusted relationships among our suppliers that we can manage in a much more proactive way to insulate ourselves from the kind of prices we have had to deal with this time around.

Of course, the whole world is trying to do the same thing, so there is some competition. Diversification is at the heart of the resilience that we need to build into the supply chain, as indeed is building up a stockpile that can cope with virtually anything the virus will throw at it.

On your first question, how do we tap into the enormous willingness of the UK public to help? It is extremely valuable if you can capture it. It works at the level of big companies like Unilever, Procter & Gamble and Reckitt Benckiser. They have all said to me, "What can we do to help? We make stuff. Can we show you how to work an Asian supply chain? Can we help smaller manufacturers to gear up their engineering so that they can manufacture on a competitive basis?"

We had about 14.5 million offers of supply from people who had some way of bringing PPE into the country. It took an enormous amount of work and triaging to reduce it to the ones that were meaningful. We had over 300 companies that wanted to produce PPE. Some of them did it locally; some of them did it free. Out of those 300, I have something like 30 on meaningful contracts. Among them, with respect to aprons, some mask categories and eye protection, we will cover in the next three to six months between 20% and 50% of our UK demand. You could not be more right; if you can capture that and give them something to do, it is a powerful force.

Q556 **Amy Callaghan:** Thank you for joining us today, Lord Deighton. There was significant controversy around PPE procurement for Scotland some weeks ago, with reports in the press indicating that Scotland had been shut out of PPE procurement that had been designated for the whole of the UK. That was right at the height of the pandemic.

Where we are now is that the Scottish Government have ensured that Scotland has its own PPE procurement and manufacture pathways. To put it bluntly, Scotland being shut out of the procurement processes only resulted in a lack of trust in the system. It incited fear that supply would not meet demand, and you have noted that supply meeting demand is your goal. How are you working to ensure that there is both trust and transparency around PPE procurement and what is rightly an emotive

issue right across the United Kingdom?

Lord Deighton: That is an important question. I see my role as ensuring that there is sufficient supply to take care of the whole of the United Kingdom, even though of course the national health service is a devolved matter. In this sort of emergency situation, when I talk about the demand I am trying to cater for, I want to make sure that we have stocks that, if necessary, can be used for the whole of the UK. One of the first discussions I had was with the Scottish Minister, Mr McKee. Frankly, I was extremely impressed by how Scotland has read the situation and how well they have taken care of their own requirements.

Across the four nations, the system of mutual aid works very well. If England is short of something and Northern Ireland has it, they supply it and vice versa. That works quite actively. Every Friday afternoon, I foster a collaborative meeting among the four nations. It has been particularly focused on our growing manufacturing efforts.

By way of example, to make masks, you need quite a rare raw material. It is actually made by a Scottish company, Don & Low, and we all agreed how that scarce material could be divided up across the four nations and their manufacturers so that it was fair. I completely get the need for collaboration, which I think we now have, but I also accept the responsibility that ultimately we, in this emergency, need to be the lender of last resort if it is necessary, and we will treat Scotland, Northern Ireland and Wales just as we do any English region to make sure that they are supplied.

Q557 **Paul Bristow:** You have touched on this. A few weeks ago, I asked a question about manufacturers in the UK who are making PPE and were finding that it takes weeks to get kit certified. I asked if the process could be speeded up or even waived when there were shortages. I would like to understand if that is still the case.

Secondly, a common complaint was that lots of companies were saying that it took a long time for the Government to respond to their efforts when volunteering help. You said you went through 40.5 million offers of PPE suppliers. Could you give us an overview of how you managed that enormous level of offers?

Lord Deighton: First of all, on the manufacturing side, I am smiling because when I started the manufacturing effort I brought in a lot of my own contacts. Many of them had been driving forces behind the London 2012 Olympics. I just told them to go and make that category in the UK. They would come back and tell me, "I have found a company that can get it up and running in about three days, but I am afraid it is going to take us three weeks to approve it." I understand the challenge.

We are balancing it with the need that the kit has to be safe and has to work. There is a degree of process and bureaucracy around it, but in an appropriate way, particularly in getting the new manufacturing up and running, I have been driving that through on a case-by-case basis to

accelerate it. You will find sporadic examples of much smaller manufacturers who have got stuck in the system. I apologise for that. We always do our best to try to work it through.

In terms of the offers of supply, just think what happened at the beginning of this when we found ourselves desperately short. We obviously pursued every possible option to buy. There were 14,500 offers, not millions.

Q558 **Paul Bristow:** I was going to say that it was extraordinary.

Lord Deighton: Yes; 14,500 is a lot to get through. It was a combination of companies that were in the business, middlemen who thought they knew people, and opportunists. Sorting through all those to figure out which ones could produce a piece of equipment that we wanted and which ones could get it there on time, and trying to make sure that we were not competing against ourselves by bidding on the same things that were coming out of one Chinese factory, was a long and complicated process. We have ended up with something like 100 new suppliers.

We are now in the process, frankly, of closing down a lot of those 14,500 offers that are not going to come to fruition. You may hear some noise about frustration because we have not followed up, or at least have not accepted their offer, but I regard that as a sign of success; we are now focusing much more of our time on the strategic building in of resilience with suppliers who can be with us in the longer term. That is what we need to secure PPE in the way we want.

Q559 **Sarah Owen:** Supply is one thing, Lord Deighton, but how is the prioritisation of the distribution of PPE in the UK being managed, especially as more things open as lockdown eases? Is it going to be for the NHS, carers, charities, emergency services or the transport industry?

I have one quick plea around the manufacturing of PPE. As 75% of NHS and care workers are women, and a large proportion of them are ethnic minorities as well, can we make sure that the PPE being manufactured in the future is fit for the staff it needs to protect?

Lord Deighton: Yes. I am very well aware of the need. First, for it to work it needs to fit properly. I am very well aware of that. This morning, I was working on making sure that in our local resilience forums we have extra-small gloves and extra-large gloves. Sometimes, it can be a challenge. I talked about 100 new suppliers, but some of them have not supplied us before and, when their kit comes in, you sometimes find that it is all one size, or it is all the wrong size. In the emergence from the crisis, there are those kinds of issues and we have to work our way out of them. Once we are focused on the trusted, reliable suppliers—including domestically—our ability to manage the detail of sizing and distribution will be greater.

To make sure that it gets to the right place in a fair way, the big switch we made in this crisis was going from supplying just over 200 hospital

trusts, which of course are sophisticated organisations that generally take care of themselves very effectively and let you know when they have shortages, to trying to supply around 58,000 end points, when you include all the social care users. One of the areas where I have spent the most time is trying to understand that we are getting equipment to every corner of that network and that every corner of that network is using PPE in the way it should.

The system we have enables them to call up the NSDR if they are short of equipment. We are putting kit that they need into the wholesale world, which is where they are accustomed to buying it. We do a lot of survey interviewing and intelligence gathering. In fact, last week I set up something I have called the social care intelligence unit to make sure, on a consistent basis, that we are not missing anyone in that sector. I recognise how vulnerable it is, and I wanted to double up on our homework there to make it work. I am very sensitive to the point you made. We are working hard to make sure we get into every corner of the system in a fair way.

Q560 **Rosie Cooper:** My question concerns quality and capacity. I am told that 1,000 face masks received by a north-west hospital failed fit testing and that the restart of planned elective surgery is now threatened. Some cancellations are already taking place. Lord Deighton, what assurances can you give trusts that PPE will be sufficient in quantity and quality to cover the scaling up of electives and a potential second spike?

Lord Deighton: That is a very important question. We are extremely focused on that. It is all part of the plan. The modelling that I talked about in estimating demand is absolutely based on the restart of broad national health services and the recovery of every part of the system. Of course, we are also trying to put in place the stocks to deal with the potential of a second wave and, indeed, to get ready for the winter. That is another way of looking at the challenge.

As I said, we are hitting our targets to have the supplies in place, category by category, through the next 90 days, to meet that level of demand. We have a distribution system that allows us to be extremely flexible in responding wherever we find a shortage. As I said, from time to time, because we are still in a highly disrupted state, there will be challenges, whether because we have received something from a new supplier that is not quite what we had hoped for or because we have asked a trust to use a mask that may not be their favourite and the fit testing process has its challenges. We are very grateful for the work we do with the trusts. They are flexible and give us feedback so that it works as well as possible.

The broad message I am giving you, Rosie, is that we have the supply in place, but there will be some stresses. I think we are well positioned in the way we work with the trusts to manage those stresses. We have certainly managed that in the last few weeks.

Q561 **Dr Davies:** Lord Deighton, I wondered to what extent your remit extends to PPE uses outside the healthcare arena. When do you anticipate that most of the issues you have identified will be dealt with? When will the job be done?

Lord Deighton: In my remit, I am focused on clinical PPE in the healthcare and the social care system, and other areas that use clinical PPE, like the Prison Service. I suppose I am brought into discussions about PPE elsewhere, to make sure that we understand what the supply situation is, but my remit does not extend to being responsible for it.

As to when the job is over, I will want to be confident that our supply is resilient and that we have an organisation in place that has the ability to ensure that resilience. Whether that takes another month or another three months, I am not sure. That is the way I measure it.

Q562 **Barbara Keeley:** I support Sarah's point about female staff and BAME staff. The fit is so important. It is not a nice to have; it is a life and death thing. There is a lot of feedback about that.

I want to talk about getting PPE to care homes. There were real issues for our care homes with price gouging. At a certain point, they had to pay what the market was demanding, and that is causing them ongoing financial problems. They just have to pay what they have to pay.

In Greater Manchester, where we had the problem of getting PPE to the care sector, because health and care is devolved, our Greater Manchester Mayor and 10 authorities worked together with the NHS to get a separate supply and set up mutual aid. Are there any lessons from what we did in GM for elsewhere in the country? Could more local authorities work together with the NHS on that?

Lord Deighton: Yes, that is a very good model. We have found that local authorities are extremely important players in delivering services locally. They have been key to how we operate the local resilience forums. I agree that that is a route to shoring up supply to every corner of the social care system. It is something I would like to follow up.

Chair: Thank you very much. I am afraid that we have come to the end of our very full session. I thank all our witnesses. Lord Deighton, thank you for the work you are doing on PPE. It is enormously appreciated by the whole Committee and, indeed, by the whole of the House of Commons. Baroness Harding, Professor Fraser from Oxford University and Vice-President Chen of Taiwan, thank you for your contributions. Thank you to the House of Commons technical team. That concludes this afternoon's session.