HOUSE OF COMMONS

# Home Affairs Committee

## Oral evidence: Home Office preparedness for Covid, HC 215

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Watch the meeting

Members present: Yvette Cooper (Chair); Ms Diane Abbott; Dehenna Davison; Laura Farris; Andrew Gwynne; Dame Diana Johnson; Tim Loughton; and Stuart C. McDonald.

Questions 1050 to 1082

### Witnesses

I: Professor Adam Finn, University of Bristol, Member of the Joint Committee on Vaccination and Immunisation; Elizabeth Hegarty, Director of Services at Heathrow; Professor Kelley Lee, Research Chair in Global Health Governance, Faculty of Health Sciences, Simon Fraser University (Canada) and Chair of Pandemics & Borders; and Professor Christina Pagel, Director of the Clinical Operational Research Unit at University College, London, and member of Independent SAGE.

# Examination of witnesses

Witnesses: Professor Finn, Elizabeth Hegarty, Professor Lee and Professor Pagel.

Q1050 **Chair:** Welcome to this evidence session of the Home Affairs Committee. Today, we are taking evidence on what the future border arrangements need to be on Covid over the next 12 months.

We are very grateful to our witnesses for joining us: Professor Adam Finn from the University of Bristol, who is a member of the JCVI; Elizabeth Hegarty, Director of Services at Heathrow; Christina Pagel, Director of the Clinical Operational Research Unit at UCL and a member of Independent SAGE; and—we are particularly grateful—Professor Kelley Lee, Research Chair in Global Health Governance, who joins us from Canada at an ungodly hour of the morning and who is Chair of the international academic research group, Pandemic Borders. Welcome to all of you.

To begin, may I ask you for an overall reflection on the nature of the border system that we will need to have operating and the challenges we face over the next 12 months as the vaccines are rolled out but as Covid continues to spread in different places around the world? Let us begin with Professor Lee.

***Professor Lee:*** Good morning, everyone. I think we have hit a critical time in our border management strategies, so the vaccines have been a game changer. We are in an important position to change the strategy that we have had up to this point.

Generally, our project has been looking at all countries around the world and how they have followed varying strategies. Countries fall into two camps: the mitigation and suppression camps—which camp you fall into influences how you take the next 12 to 18 months.

In Canada, we have a similar strategy to the UK's, so I can speak to that. Basically, the idea is to move to a vaccination or immunisation-based system. The key thing there is to match as closely as possible the protocols on testing and quarantine to link to the different categories of people according to their vaccination status. We have fully vaccinated, unvaccinated, partially vaccinated and—the fourth category, I guess—the natural immunity from previous infection.

Different countries are deciding whether to allow which categories of people to come through and which protocols they will be subject to. Those are the key things, to match those up, to get those right and to ensure that you have in place at the borders the systems to process those individuals. We can talk further about that, but that is the overall challenge at the moment. Countries are negotiating those systems now.

***Professor Finn:*** I agree that the vaccines are now increasingly becoming part of the picture, but of course the degree of vaccination and the access to vaccines varies very widely from one country in the world to another. If

we are contemplating enabling travelling to occur, it will be very complex in terms of the ability of people to have been immunised and thus be able to travel.

The other area of complexity around the vaccination side of things, which is my area, is that the evidence we have on vaccine effectiveness is mostly around the ability of the vaccines to prevent symptomatic and severely symptomatic disease. We have much less evidence on prevention of infection and even less on their ability to reduce transmission from people who get infected despite having been immunised. Those latter factors are critical when you consider the use of vaccination status to enable travel, because vaccination—even fully and recently done—does not eliminate the risk that someone will transmit the virus.

The other final point to make, by way of introduction, is that, clearly, we are at a point where the virus is now being exposed to selection pressure related to immunity. Until now, I guess, its ability to transmit has been the primary driver of evolution of new variants, but we will now be in a position, including in the United Kingdom with the current wave, where a very significant proportion of the population has anti-spike immunity, so mutants that emerge that have partial resistance to immunity to spike will have a selective advantage. So we will see a complicated situation emerging where, having had a vaccine—there are many different vaccines—will not be a completely clear predicter of how much risk you pose when you travel.

***Professor Pagel:*** I do not see vaccination as the big game changer for borders, for this reason partly: we know that vaccinated people can and do transmit, even if much less than the unvaccinated. In Singapore and Israel, clusters were started by transmission through fully vaccinated people. In Israel, when they released their efficacy, they used symptomatic and asymptomatic infection, and they said Pfizer was only 64% effective.

The big issue for me is that, last summer, in a sense international border policy was about preventing new cases—new infections in a situation in which we had low infections—but in the UK we do not have low infections anymore and Government policy is no longer about trying to have low infections. We are worried about new variants, as Adam Finn was saying. In the latest stage, it is very clear that a new variant that is more vaccine resistant is the biggest risk to the UK programme going forward.

From that point of view, what we are worried about is any kind of Covid variant that can affect vaccinated people. To me, that means, if anything, that it is cases in vaccinated people that we should be most worried about. Having any kind of system that removes border measures from vaccinated people almost means that when you do get Covid going through borders, it will be in people where there is more likely to be a vaccine-resistant variant. That, to me, is a big risk.

The other issue that SAGE also highlighted in its recent minutes was that as cases are very high in the UK, our test, trace and isolate system and

our sequencing capabilities are going to be really strained, reducing our ability to spot and track new variants. If things get through the border, you can mop up any breakthroughs through a really good local contact tracing system—that is what Australia has been doing for the last year and a bit.

We were in a much better position, almost, when delta came in April and May because we had much lower cases and we could sequence most cases and do a lot around contact tracing. Now, we are in a much, much worse position if we get a new importation because we have so many other cases taking up resources. Actually, at the moment in the UK, we are in a really dangerous position in that sense.

***Elizabeth Hegarty:*** Good morning, Chair. For us, the thinking is, "How do we operationalise any of the Government guidance and the decisions that are made based on the science?" If that happens, it will enable us to safely recover our industry and society, and to contribute to the economy.

For us, that is really delivered through supporting, as an industry—especially airlines and airports—the checking of those recommendations, whether they are based on testing or vaccinations, as is already the case for so many other passenger requirements and information. Airlines have trials underway, and are already undertaking—very successfully, based on CAA feedback—upstream checks.

For us, it is the ability to operationalise that, such that when people do travel they can do so in a really free-flowing way with the lowest-possible dwell time. Of course, that is great for the customer experience, but it is also better for passengers to be moving freely through airports and when they are working with airlines.

Q1051 **Dame Diana Johnson:** I want to ask about the traffic light system for international travel that is currently in place. Does applying border measures to arrivals from different countries on the basis of the traffic light system effectively manage risk? If not, what alternatives are there?

***Professor Pagel:*** On the traffic light system, back in January, when SAGE did a few papers on this, they were very clear that any kind of geographically-based system would not prevent the importation of variants, particularly in the UK context, because the UK is such a highly-connected international travel destination that by the time you know about a new variant that is a problem, it is likely already here. That is one of the main issues. They basically said that if you really want to keep variants out of the UK, the only way is a managed isolation system similar to what Australia, Singapore and other countries have.

If you do want to do red-list travel, or that kind of traffic light system, it will work best with regions that do not have direct travel links to the UK, which are not that many, or where there are not that many people coming in through those kinds of links. One of the issues with delta was obviously that the travel between India and the UK is substantial and well established; in that sense, by the time we knew, there were probably

already cases here. Had we done it earlier, we could have prevented several thousand more cases, but that is kind of an issue with it. Of course, you can always do third-country travel if you are really minded to.

I do not think it is that effective. SAGE reckons that it can delay entry, and to be honest, when you are vaccinating, any delay is a good delay, because you have got many millions more people vaccinated and you have that much more chance of finding out more about the variant.

The other issue for the UK is that we are one of the countries that have the best genomic surveillance systems. For most countries, if there is a new, potentially concerning variant, we are not going to know about it, and often we might be one of the countries actually providing the most evidence on it. I can almost see how, for other countries, the traffic light system might work better using our data—for the UK, less so.

Q1052 **Dame Diana Johnson:** Thank you. Professor Lee?

***Professor Lee:*** I think it is worth recognising that the traffic light-style system has been used in many countries for managing international and domestic travel. These systems, based on geography, use geography as the basis of risk assessment and mitigation. So even the US and New Zealand both actually use a geography-based system. They categorise countries from level 1 to level 4; level 4 is "do not travel". Israel uses a ranking system to some extent.

However, the overall question really is whether these designations that are used translate into appropriate policies to manage the associated risks of those different categories. How do you arrive at red, green and amber? Which countries do you put in those categories, or levels 1 to 4, and how do these rankings then translate into effective risk mitigation? That is where countries tend to differ quite a bit. If you are not putting into place the right measures for the right level of risk, then your system doesn't work.

That then leads me to several questions. First, is there a methodology of data behind your system that actually accurately assesses risk and are you gathering the right data, for example, at the right time? It has to be timely and it has to be appropriate. We can judge countries that way. You really do need to have the right information going here, otherwise it's a "garbage in, garbage out" situation.

More fundamentally, however, what is possibly behind your question is this: is it possible to categorise risk based on national borders during a global pandemic? It is fair to say that someone travelling from New Zealand would probably pose less of a risk of virus importation than someone from Peru at this time. However, is it really possible to designate a country like Malta as green when most of the rest of Europe is amber?

The problem is that the traffic light system assumes that each country is sort of hermetically sealed, when in reality we know that they are not and that there is substantial traffic in and out of countries from travellers around the world. If you look at Malta, we have this traffic light system.

There are several countries on Malta's own traffic light system, like Turkey and the United Arab Emirates, which are actually designated as red in the UK.

There is this kind of inconsistency across countries, which is really important, because if you are a holiday maker from the UK going to Malta and you are lying on the beach beside someone from a UK-red country, and then you return home and you are somehow exempt from testing or you have less testing and less quarantine, that is problematic. That is mixing populations in a third country. I guess then that this raises the problem that, with countries using a traffic light-type system, different countries have different ways of classifying countries, so there are these inconsistencies.

Then, beyond that there is mixing of populations at airports, holiday resorts, public venues and so on. That, again, undermines geography alone as the basis of risk assessment.

Finally, I guess that I would add that there is a broader question of whether geography, as I say, can be effectively used as a system of risk assessment, based on the fact that we are at this stage of the pandemic.

Early on we could have possibly used the system because there was far less virus circulating. There were countries that had a high number of cases versus countries with a low number of cases. Of course we didn't have testing as much as we do now. You had to use it as a proxy: geography was a proxy for assessing risk. Now, however, we are at a point where the virus is circulating widely and populations are continuing to mix through travel. That really undermines the use of a traffic light system.

Finally, just in reference to our colleague from Heathrow, there are all sorts of operational problems that you may speak about anyway, so I won't pre-empt that. But if you have a traffic light system and you operationalise it at an airport, but then the populations that you are separating out are then converging in the same place in an airport, that's a bit of a problem.

It reminds me that we all use recycling systems, so people collect and separate their recyclables. It is collected up, but then we hear sometimes that it is all dumped into the same landfill, so it's a totally pointless exercise. I think people bunching up at airports and sort of mixing together from different categories of risk really undermines the traffic light system.

Q1053 **Dame Diana Johnson:** Thank you. Perhaps Elizabeth Hegarty could deal with that particular point about what happens in the airport with different populations mixing together.

***Elizabeth Hegarty:*** Absolutely. Thank you to the scientists for the comments on the traffic light versus the individual rules. We will definitely leave it to the scientists to make those recommendations.

For us, it is about how we implement the requirements to enable that risk-based travel. To clarify, the different requirements could include a managed hotel quarantine versus a home quarantine for an amber list country, which of course could involve transportation on a public transport network and then onward to someone's home, and the assurance of that afterward, which of course cannot be managed at any border, whether air or sea.

For passengers arriving from red countries in particular, we have had a red arrivals facility available at Heathrow since 1 June. We will confirm by the end of this week our process for passengers who arrive indirectly via a red country or who have been in a red country in the last 10 days, before we really start to see a ramp-up in travel.

At Heathrow, we see an average of around only 1,300 red arrivals each day. This is a small number, but it needs to be effectively managed, and having that arrivals facility enables the Department of Health and Social Care to really streamline its process and to manage it in an extremely tight and confined way with its contractors.

For the broader amber and green countries as they are currently classified, and then the additional layers recently announced for UK residents, I think the point that Christina made around how UK residents and passport holders are able to return safely, based on both where they have come from and their status, is pivotal. The contribution that makes to our economy and our industry is pivotal for us, being an island nation, and for the international transport industry—not only aviation—to be able to contribute the jobs and economic benefits that we provide for an economy such as the UK's.

The way that we intend to contribute is by airports and airlines giving assurance of our checking of whichever recommendations are made. On testing, that is both in assuring that inbound testing is provided and that testing is available—for example, at Heathrow we have capacity for 15,000 passenger tests a day—and looking at what we can do to continuously improve those processes so that people feel assured that, even if they cannot see a check, they can be confident that it is safe. Sometimes we may have more visual checks that can be easily seen but may not be as effective as the automated or digitised checks.

**Dame Diana Johnson:** Thank you. Professor Finn, would you like to say anything on this?

***Professor Finn:*** I think all the important points have been made by my colleagues, but I have a couple of things to add. First, as has already been stated, we are dependent on highly variable epidemiological data from different countries to categorise them. That can be confusing, and of course the quality of those data can vary.

There is some scope for international co-operation here, because if countries can agree on the datasets that they are going to use to categorise the countries into different traffic lights, as Kelley was saying,

and if there was some consistency around that, that would be much less confusing for people, and people would get things right more often.

That leads me to my last point, which is understanding the communications on this. I think there are risks with the traffic lights system, as well as with categorising vaccinated people as being somehow safe, where people get a false sense of security—they are coming from a green country and they think there is no risk, or they are coming vaccinated and they think they do not pose a risk to anyone else. These kind of categories will be necessary to make it all workable, but we will have to work really hard to avoid giving people wrong impressions about the risks that they pose to themselves and to others when they travel.

Q1054 **Dame Diana Johnson:** Thank you. I know that time is short, so I just wanted to ask about the requirements at the moment around mandatory pre-departure and post-arrival Covid-19 testing, and what your view about that is in the longer term. Will we ever get to a point where we will not be requiring that testing to take place?

***Professor Finn:*** Testing is not my specialist area. I have some knowledge of it, but I am more expert in vaccines. I think that the main issue with testing at the moment is that we depend on the highly specific and sensitive PCR tests, which take time, and time is always going to be a problem in the context of travel and risks. The rapid tests that we have are less sensitive, although possibly more indicative of infectiousness, but my instincts are that a wider-spread use of rapid tests is likely, in the context of travel, to be more workable in the longer term, simply because they give you quick answers.

Having said that, they are quick, but they are probably not quick enough for Elizabeth and Heathrow, because adding even 20 minutes on to somebody's transit time creates very significant logistical problems. I am not sure I have answered the question in a very useful way, but those are my thoughts.

Q1055 **Dame Diana Johnson:** No, that is helpful, thank you. Professor Lee?

***Professor Lee:*** Testing will be around for a while. The point has been made that the rest of the world is still becoming vaccinated—we are far from an equitable position—so what we are seeing is that we are trying to understand how many times people need to be tested depending on their vaccination status. Pre-departure tests only catch so many—there are lots of ways that you can become infected before you reach your destination, there can be false negatives and so on—so then you have your point-of-arrival test, and that only catches so many as well, but the numbers look very good.

I guess people need to make a decision, or the Government need to make a decision, on what percentage of imported infections they are aiming to catch. If it is 100%, you have to have three or four tests. If you are going to make a decision to catch only, say, 95%, then you might get away with two, or possibly three. It really does come down to more of a political choice, I think, on how many times you test a traveller.

The key thing is who you test, because on a traffic light system, my understanding is that you exempt some people from quarantine as long as they are tested to some extent, but there is not necessarily the full testing after a person arrives, and that can be potentially problematic.

What we have seen in countries that are following a suppression strategy, of course, is that they are combining the testing and the quarantine quite tightly. It is a two-step process: you want to identify as many cases of imported infections as possible, but also layered on top of that is the quarantine system.

Even with vaccination, with the possibility of becoming infected and transmitting the virus, you still need to keep that going for some time, and of course with people coming in, if you are allowing unvaccinated travellers to come in, then the system has to continue. We are not quite there yet with getting rid of testing. I think, actually, that testing is incredibly important. We might go to rapid testing more in future, but we are certainly still far away from reducing testing.

Q1056 **Dame Diana Johnson:** Thank you. Christina Pagel, do you agree that we are going to have testing for some time to come?

***Professor Pagel:*** I think so. To me, the biggest game changer would be if we can get to saliva testing. I know that people have been trying to make that, and I am guessing it is really difficult—that is not my area of expertise—but the problem at the moment is that people have a lot of incentive to test negative.

SAGE estimated that you could catch an extra 11% of infections if you did airport testing on the day of travel, and that is assuming 100% adherence—so, people taking the test properly. There is a difference with taking it in a supervised situation, where someone watches you take it and guides you and makes sure that you are actually probing far enough down.

I mean, people who have done these tests know that they are quite unpleasant: you have to get to your tonsils, get up your nose, and if you do not, then you are very likely to test negative even if you actually do have Covid. To me, that is an issue, when thinking about why people are travelling.

If you could have a really rapid saliva test, that would completely change how much you can trust the tests.

The other question about vaccination is that, for the foreseeable future, we will all allow in unvaccinated people, because we are allowing in children. At the moment, no vaccines are licensed for the under-12s, and only some countries are vaccinating adolescents. We know that in the UK and in most populations that are highly vaccinated, young people and children currently have the most infection. If we think about holiday destinations—especially hotel or resort-type holidays—a lot of children mix with each other, and children might be more asymptomatic, so we don't know that they have Covid. So, to me, that is a big issue going forward.

Again, if we could get to saliva testing, that would be a lot easier to deal with.

Q1057 **Dame Diana Johnson:** Thank you. Finally, Elizabeth Hegarty, is there anything you would like to add? Are you planning for testing in the long term?

***Elizabeth Hegarty:*** Yes. We have invested heavily in facilities. We have a strategic scientific partner working with us here. We commenced trials of testing very early on during Covid, including the saliva-type testing described here. We are very used to a layered approach to managing risk in our industry, as you can imagine, so we have provided these facilities and will continue to develop them as required to sit alongside vaccination and country-level status so that we are able to facilitate travel in the safest possible way. That starts with UK citizens very shortly.

**Dame Diana Johnson:** Thank you.

Q1058 **Tim Loughton:** May I come back to Elizabeth Hegarty? It is getting increasingly depressing, with the evidence that we are hearing, about how long this will be with us, how necessary testing will be, and not just taking for granted the fact that someone who has had the double vaccination is not a threat, because—you put it, Christina Pagel—they are the ones you are most interested in if they are carrying new variants that the vaccine does not combat.

Ms Hegarty, you said earlier that you have the capacity to test 15,000 passengers a day at Heathrow. The figures for April, the last month we have, show 1.2 million passengers travelling through UK airports, of whom two thirds were through London airports. Two years ago, before the pandemic, that figure was 24.6 million. How on earth will you be able to cope with any step up of testing with those hugely reduced numbers we have now, let alone if we try to add more countries to the green list and more people are able at last to go on holiday and to travel abroad? A completely different scale of demand and resource is required, is it not?

***Elizabeth Hegarty:*** Of course. I guess a primary view from our perspective is that we need to provide facilities, but that not all testing needs to take place at the airport. For us, being airport workers and very used to the types of testing, I would describe at the moment the societal acceptance, the getting used to testing in our communities, as a really huge step, and for that test being affordable and accessible. There needs to be mixed provision, not just at the airport, because not all tests can report back in time, as described, while dwelling at the airport. Therefore, there needs to be a mix of accessible provision that is affordable for passengers to travel.

Q1059 **Tim Loughton:** How will it work? You keep going on about dwell time and, obviously, your imperative is to reduce dwell time as much as possible for passengers coming through your airport, while maximising the time they can dwell at the shops on the way to the plane. This will add a huge additional time constraint, which you will not be able to cope with if those figures return to anything like normality, or even just half of

normal, while you are still expected to be monitoring and testing for new strains in particular.

***Elizabeth Hegarty:*** We think about that in terms of the departure, connecting or arrival journey. Of course, we want all passengers to have tested. At the moment in the UK, we require them to take a pre-departure test at no more than 72 hours before arrival and then again on day 2 and day 8 after arrival. There is no requirement at the moment for significant arrivals testing facilities at airports, but there is some provision available should customers and passengers choose to use it.

For the connecting journey, there may well be a need in the future, for our own requirements or those of other countries, for testing within airports. That is why we undertook the trials of the various types of test—to inform Government guidance on that. When it comes to departures, most passengers arrive at the airport only a maximum of three or four hours before their departure.

The requirement for most countries at the moment is a test between 48 and 72 hours in advance, so we find that the majority of passengers are confirming their test results before they travel. They want that certainty of travel before they arrive at the airport. That is why we have confidence that a mixed provision that includes some airport capacity but is not solely reliant on testing happening at the airport is pivotal, because many people will be starting their journey—especially for a hub airport like Heathrow—well before they are in the London area.

Q1060 **Tim Loughton:** So basically, you will not be able to deal with mass testing at the airport? Does it all have to be done in advance, and it will be up to the individual airline, presumably at the check-in desk, to check that that person has had the necessary tests, or do you have to produce documentation to prove it somewhere else in the process?

***Elizabeth Hegarty:*** For your departure journey, it is always the airline's responsibility—it was even pre-Covid—to confirm the requirements for travel and for entry into that destination country. The testing provision we have at the moment is based on the developing testing. Some countries require PCR, others require lateral flow, and we have discussed saliva options here. The tests we have undertaken mean that there are different capacities and ways of operating for different types of tests once they are confirmed not just for the UK, but of course internationally.

Q1061 **Tim Loughton:** Professor Lee, can we look at the wider international comparisons about the effectiveness of mandatory Covid testing for international travellers? Do some countries have this sussed already, or are we all struggling with how on earth we can face some of the challenges we have just been discussing, particularly around new variants?

***Professor Lee:*** Certainly, some countries have got it better than others. What we shorthandedly call "suppression countries"—Thailand, Vietnam, Australia, New Zealand and so on—tend to do more testing and do it well,

because of the types of testing, and the point at which they do it and so on. There is much more supervision of that testing.

You raise a really important point about the volume of travel. As we know, in Australia and New Zealand, there are systems of quotas. They know that they cannot handle the large numbers of pre-Covid travel levels, so they put quotas in. That is controversial, I know, but the key point is that if you are going to put in gold standard-type testing and quarantining, you need to get the volumes down because you cannot possibly handle that many travellers. In the UK's case, we are talking about millions of people; you cannot possibly test them to the degree that you may need in order to identify an acceptable number of infections coming in. That may be something that the Government are choosing—they might rather have the volume than the identification of the proportion of cases. It is a trade-off.

You have to think about what will happen when easing of measures happens and people think, "I can travel again: there are so many amber countries now and I am fully vaccinated." The numbers are going to spike up and I do not think a lot of countries are ready for that logistically. That creates risk in the system because then corners are cut as we want to keep travel going rather than trying to keep people safe. It is a real trade-off, and I am concerned about it.

**Tim Loughton:** There has been a lot of criticism that the Government might have been stricter in controls on people coming into the country, especially from India, with the timing of the Indian variant becoming a variant of concern. You are in Canada but you will have seen what has happened in the UK. Do you think that things could have been done differently in the UK, and did other comparable countries—large transit centres like the UK—do something very different and have different outcomes when we were starting to deal with the Indian variant?

***Professor Lee:*** The variants are a really tricky one. Countries that have done well, in terms of variants and importation, have been those that already had comprehensive measures in place—those suppression countries. When variants came along, they had a preventive approach. If you are screening, testing and quarantining everyone coming into your country, you will catch the variants. Some have now slipped through, of course, which attests to the challenge of variants, but generally those countries have had far fewer cases.

In the UK and many other countries, there is more of a reactive approach. A variant comes along and there is this kind of wait-and-see attitude—wait and see if it comes to the country and then do testing and genomic sequencing. However, by that point, it is likely that that will be too late, and you have the variant in your country. The difference between the preventive approach and the reactive approach is what differentiates countries, in terms of the number of cases. Here in Canada, we have done terribly; we have had virtually every major variant cause an outbreak because we have had a wait-and-see approach, rather than that preventive mentality.

Q1062 **Tim Loughton:** On that preventive mentality, you are referring particularly to eastern countries that had the SARS experience and were therefore better prepared because of that. Are there western or European countries, or others more comparable with the UK, that had not prepared because of SARS but which have done much better than, say, the UK has done? Or was the UK little different from other European and western countries in that respect?

***Professor Lee:*** I have to say that I do not have much detail on the European countries in terms of the variants and the approaches. However, going back to the geography question, it is very difficult to categorise areas of the world as hotspots. We have always said through our research that we need to think of the whole world as a hotspot, potentially. Putting in measures that are not reacting to, for example, Brazil being a hotspot but instead test everybody who comes into your country is the way to do it. Do not just wait until a so-called hotspot happens.

I cannot think off the top of my head of a European country—there is Australia and New Zealand, obviously, and Israel—but you are right that the Asian countries have put this in place and been more successful.

Q1063 **Ms Abbott:** I wanted to continue to talk about the issues with new variants. What could our Government have done differently to prevent the delta variant from spreading to the UK?

**Chair:** Professor Finn, do you want to come in first on that?

***Professor Finn:*** The obvious answer is that they could have perhaps restricted travel from India a little sooner. With both the first wave in March last year and the emergence of the delta variant now—the third wave—we have witnessed that people who live in the UK love to travel, and that they travel in large numbers, and both the first and the third epidemic waves that we experienced were the result of multiple simultaneous importations all over the country.

It was not that there was a handful in one or two places; even though there was a focus on certain cities in the north, for example, the fact was that there were cases of delta all over the country. People came back from India all at the same time, many of them with this variant, so the scene was set for the position we are in now. I do not think I can say much more than that. As Kelley was just saying very eloquently, the only real way to stop this from happening is simply to test everybody. That is probably very challenging for a country like the UK.

Q1064 **Ms Abbott:** But there is nothing short of testing every single person who comes through the border that could have helped stop the spread of the delta variant?

***Professor Finn:*** As it turns out, I think that is right, because it is so transmissible. There was some hope at the outset that the spread of it could be contained, that the cases that were being found around the country would not all spread and go everywhere, and that we would perhaps be able to find foci of it, so that it could, through efficient surge testing and isolation, be driven down, but that turned out not to be the

case. In exactly the same way, when the H1N1 flu went around the world in 2009, there were hopes that somehow it could be contained; it could not be. Once a virus is infectious beyond a certain level, a certain R number, it becomes extremely difficult to contain it.

Q1065 **Ms Abbott:** Is there any way that the UK can improve its surveillance and response to new variants?

**Chair:** Christina Pagel, do you want to come in?

***Professor Pagel:*** To go back to the delta question, testing everybody may be necessary, but it is not sufficient. Someone needs to be able to act on a positive test in a way that prevents the variant from spreading. That is why managed isolation is better than home isolation. SAGE estimated that it was 50% more effective.

The other important thing that happened with delta is the precautionary approach. India warned us about a variant in March, but it was a month or four weeks before it went on to the red list, after which arrivals dropped dramatically, but by that stage it had been well seeded across the UK. We had our genomic surveillance, we had Public Health England publishing reports on it every week, but we did not do anything about it.

It was like, we had this amazing surveillance system that was documenting delta with incredible science, without trying to prevent its spread. There was this feeling that, although it was doubling every week, we kept trying to find reasons for that doubling not to be because it was more transmissible. It was, "Oh, it's just travellers, and we have low prevalence", or, "It's those kinds of communities, which interact differently", or, "It's just a few bad super-clusters." It was all, "We don't know for sure and until we do, we are not going to do anything." Time and again, in this pandemic, that has proved a mistake. It proved a mistake with the alpha variant, and it has proved a mistake with delta.

The biggest thing for me is to act as if you know, because that is how you stop things. Right now, it is such a big threat. We have almost finished—well, we are a few months away from finishing—our vaccination programme. We have seen the impact that delta has had here. It has massively impacted our opening up. We were in a much better a position with alpha. We saw that our vaccination programme was fine and could cope with alpha—we saw that in Israel, although Israel is now having a resurgence, because delta is that much worse.

From a broader perspective, I feel that the UK, as an international hub, has a responsibility to the world—we exported alpha and I bet you that we have had a big hand in exporting delta to Europe and the States, more than south-east Asia or south Asia have. When delta hits unvaccinated populations who do not have access to vaccines and poorer healthcare systems, it will be devastating—it already is devastating. When we think about borders, we have to think about not just what is coming in or what is going out, but our role in that globally.

Q1066 **Ms Abbott:** That is a very interesting point. Are you saying that we

should have responded more promptly to the advice and warnings that we got from India?

***Professor Pagel:*** Yes. This is a personal view, but I think there is a little bit of British exceptionalism about assuming that what is happening in other countries cannot happen here. Personally, I was first tweeting about it at the beginning of April. Other people were saying, "Look, India's going through a devastating wave. They have warned about it. Why are we taking the chance?" As soon as it came here, literally within a week of delta arriving here, it started doubling every week. That is exponential growth. Even though the numbers were small, it is still exponential growth. So, yes, the warning signs were there from early April onwards.

Q1067 **Ms Abbott:** So the thing to fear in dealing with new variants is a notion of British exceptionalism.

***Professor Pagel:*** It depends on where they arise. To be honest, right now, the most likely place for new variants to arise is here.

Q1068 **Ms Abbott:** Right. What I wanted to ask was, as vaccination rates across the globe increase, is it more likely that vaccine-resistant strains of the virus will emerge?

***Professor Pagel:*** Obviously, Adam Finn is the expert on this, but generally there is a sweet spot where you have high prevalence—a lot of Covid around—and a lot of people vaccinated. That is where it has loads of opportunities to mutate, and any mutation that can affect vaccinated people better has a selection advantage and it can spread.

Once you have almost everybody vaccinated and Covid is much lower, there is much less risk. But at the moment, we are in that sweet spot. We are in it here in the UK. Europe is going to be in it within a few weeks. They're having their delta surge; they're pretty much almost as vaccinated as we are now. The US is about to have it. Cases are going up there because of delta. So the high-income countries are going to be good experimental petri dishes for new vaccine-resistant variants over the next few months. It's a risky time; that's my opinion.

Q1069 **Chair:** Professor Finn, do you want to add to that?

***Professor Finn:*** I agree with what Christina has just said. We speculated last year that this virus, being a coronavirus, would be less capable or less likely to mutate and evolve in the way that we are used to flu doing, and we have been disappointed. Clearly, this virus is able to mutate, adapt and evolve, and it will continue to do so.

It's quite correct to say that as the countries of the world that are most immunised, which are the wealthier countries, get this resurgence of virus because they are relaxing their measures, it does create the circumstances in which we are most likely to see evolution of relatively vaccine-resistant strains. Already, there is a small but nevertheless measurable increment with the delta variant, at least against more mild and poorly symptomatic disease and infection. And that's just one example; it's not going to be the last one, so I think we have to expect that.

I hope, though, that it will be a progressive and incremental process, rather than a complete collapse back to square one, because the immunity that people have got, both from infection and from vaccination, is likely still to be effective to some extent, even for evolved viruses. I think we will see a gradual erosion of the protection, and we will have to start reformulating vaccines in order to keep pace with that.

Q1070 **Ms Abbott:** Finally, how quickly will it be possible to know whether a new strain of the virus has the power to nullify the protection from hospitalisation and death conferred by vaccination?

***Professor Finn:*** We are in quite a good position to track real-world effectiveness in this country. There have been really good systems set up to link the databases that record vaccination, exactly which vaccines, when and given to whom—linking them by NHS number to positive tests and also to hospitalisations and deaths.

The data will come through first for more mild infection, because that's the large testing databases, and it takes a longer time for people to get sick enough to be hospitalised and then, in turn, to die. So we learn later—usually a month or so to six weeks later: we begin to see the trends, and the numbers of course are smaller.

I think we would see the first signs—with delta, we were able to be seeing data from Public Health England on vaccine effectiveness within a matter of a month of the emergence, once there were enough cases to be able to make some assessment of that. Other countries, unfortunately, are not so well set up—many of them—and so, if this is going on somewhere else, we might not hear quite so soon.

Q1071 **Chair:** Can I just quickly follow this up? What would you do, then, to improve our response to new variants? If that is now, in vaccinated countries, the biggest challenge for us, what actually would you do?

Clearly, the approach to delta just utterly failed. You can identify delays: NERVTAG doesn't look at it until 16 April; the decision, in terms of the Government implementing it, is not until 23 April. At what point in this process did we actually have enough data to send up the red flags on this? Is there more that we could do to get more data earlier or to have more surveillance, in terms of having a precautionary approach? Would you get different people to make the decisions? Would you have more frequent meetings on this? What is that we need to do?

It feels like there is so much at stake and we are all identifying what the difficulties and problems are, but actually we should just chuck everything at it and solve it. We have solved bigger problems in the course of the last 12 months—surely we ought to be able to solve this and develop a much faster and more responsive surveillance system to move fast on new variants. What would you do, in an ideal world if you could do anything, to improve the response to new variants, Professor Lee?

***Professor Lee:*** Right. Well, one thing that hasn't been mentioned, which may not solve the whole problem, is that most countries have created

exemptions. People who fall into certain categories, some of them very rightfully—flight crews, transport workers and so on—fall under these exemption categories.

If you look at the list for the UK, there are something like 50 different professional categories where people behave in less strict ways because of their jobs. Some of those are still justifiable, but the Government may look at those again and say, "Well now that there is vaccination available, do all these categories have to stand? Can they be rolled into some sort of vaccination status-based system to see if there can be a reduction in these exemptions?" The whole idea of the exemptions was to ensure that these people could do their jobs properly and not create risk, and that is right, but with vaccination that may be less of a problem.

A lot of these are high-risk groups in terms of travellers. A World Economic Forum study found that transport workers were at the highest risk of infection among non-healthcare workers, so you are allowing a high-risk group to travel under less stringent circumstances. So, it would very much encourage those groups that are exempt to be vaccinated fully.

I don't know what the situation is in the UK about requiring people to vaccinate, but certainly anyone who is exempted should be vaccinated. That will reduce the risk quite a bit regarding variants, but they then still need to be tested and so on, as we have discussed.

In Canada, we have something like a third of air arrivals and up to 93% of ground arrivals exempt from any testing and quarantine. It is probably no secret how the variants then got into the country, as we have a lot of people coming in and out who are not being tested or quarantined, and genome sequencing doesn't even come into it at that point. I would encourage at least one possible way of just tightening up the system, and I think you have the same situation in the UK.

Q1072 **Chair:** Thank you. Quick thoughts, Adam Finn and Christina Pagel, on what you would do in an ideal world to improve the situation.

***Professor Finn:*** Our ability to detect variants and do sequencing is good and has been massively increased recently, even from good. We are good at picking them up.

Looking back at what happened in April with delta, it is important to emphasise that whatever we had done sooner would not have meant that we now didn't have delta; it would have just delayed things. The only way to solve the crisis, in the end, is to get enough immunity in the population for the circulation of the virus to go down and not require restrictions.

Just as Christina correctly predicted, we are now going to see waves of delta in other European countries that simply imported it more slowly than we did, but they are slightly behind us in terms of immunisation so they are likely to see similar large rises. That is a pretty good prediction of what we are going to see in the next month or two. It is not like there's a fix that would have meant we could not have had a delta problem; it's just that we could have pushed it back and given ourselves more time to get

more people immunised, and then had a smaller wave in the summer period.

Q1073 **Chair:** Given that we may need, in future, to delay something for long enough to get a vaccine booster in place, for example, if we have some further new variant that causes vaccine problems, Christina Pagel, is there anything else that we could do just to respond faster than we did on the delta variant?

***Professor Pagel:*** I agree with Adam—I think our surveillance is excellent. The problem is acting on it. We cannot generate evidence quicker. That just takes time because you need the infections and you need the infections to work through the system, and to be sure, you need a lot of people to be infected—that is just the case. It is not that you can generate evidence quicker; it is that you have to act before the evidence is certain—that is the difference.

To me, the place that the UK holds as a travel hub means that if you really want to do it, you will have to have managed isolation or, at the very least, to discourage people from taking unnecessary travel. The idea that the whole of Europe is now going to be mixing in this great big summer holiday jamboree seems insane—not just the UK, but the whole of Europe.

Q1074 **Chair:** Why did it take so long for Public Health England to identify the delta variant as a new variant of concern? That was not until 6 May.

***Professor Pagel:*** Just because we could watch it doubling, but it was doubling from starting off with, I think, two infections as week, so by the time you got to maybe 1,000 infections, that is four or five weeks, and that is when it did it. I imagine that that is what it is.

If it were me, I would have taken more evidence from India. There was a lot of discussion among scientists about how reliable the sequencing was in India—they did not sequence for anything that was less than a per cent. of their cases. However, all the evidence that was there suggested that delta was outcompeting alpha. In that sense, you are thinking, "Okay, why are we not learning from that country as much as we can?"

Q1075 **Dehenna Davison:** We are talking about travel. There is a lot of talk about vaccinations being a way, potentially, to allow travel. Professor Finn, we know that the vaccination helps against serious illness and hospitalisation, but to what extent does being double jabbed actually help in terms of preventing the transmission of Covid to someone else?

***Professor Finn:*** It does that in two ways. It does it, firstly, because it reduces the risk of you getting the infection at all. If you do not get infected, you clearly cannot infect anyone else. The two doses of the two vaccines that we are mostly using reduce that risk by the order of something like 50% to 60%, and maybe up to 70% for Pfizer, but not as high or as efficiently as for preventing you from getting seriously ill, hospitalised or dying.

The second way that this can work is that, even when you do get infected, you might be less infectious to other people. The kinds of studies that can

measure that are much more difficult to do. One study from the UK called the "HOSTED" study, which was published a couple of weeks ago in the *The New England Journal of Medicine,* suggests that both vaccines, after one dose, reduce that risk within a household by around 50%. That is additive to the effect on preventing infection.

You can see when you add those together that the effects of double vaccination—the study I mentioned was only one dose; we have not yet got data on two doses—could be quite substantial in preventing you from being infectious to other people. But they are never going to be perfect in that regard; there is always going to be someone with transmission, from people who have been infected.

As Christina correctly said, as time goes by and selection pressure on the virus changes, people who have been vaccinated who have a viral infection are somewhat more likely to be carrying viruses that are relatively resistant to vaccine-induced protection.

Q1076 **Dehenna Davison:** That is incredibly helpful, Professor—thank you.

Elizabeth, the Government guidance is changing on Covid vaccination status, and now that the amber-list countries will be accessible to people without self-isolation later in the summer, I imagine you are expecting a lot more travel. What are the practical challenges of actually checking that certification, and what impact do you think it will have on Heathrow?

***Elizabeth Hegarty:*** Looking at certification, the really important thing for us as an industry is to continue the ways that the industry has worked in the past, with airlines checking the validity of testing or vaccination status. At the moment, that is mainly on a manual basis, but especially British Airways, American Airlines and Virgin are progressing very swiftly for UK application of their automated token for passengers.

This is something that the industry has been working on for a really prolonged time, just to ease travel. As with so many other things now, health certification is being integrated into that. We launched a trial with those three airlines at Heathrow last week, and the initial results of that are yet to be clarified. It is really for our own administrative checks on the effectiveness, and to give assurance to the Government and others that this is an effective check. That is well under way and proceeding well.

In terms of the layered approach that we have talked about previously, it is really important that checks are undertaken in the right place for the most effective mitigation at that point. We believe those upstream checks are key, because they are efficient and automated by the responsible authority, which is the airline, when you are boarding an aircraft or any other vessel to come into the UK. But they also ensure that we are able to flow passengers who are safe to travel in this risk-based approach very swiftly through the other parts of their journey, all the way through to their final destination.

That really leads into checking at the border the things that can be managed at the border—for example, in the instance of vaccination

meaning that isolation at home will not be required for UK residents. That is why we believe that the upstream check is the most effective one, because the assurance would be of the isolation at home, which cannot be carried out at the border in the airport.

**Dehenna Davison:** That is really helpful. Thank you.

Q1077 **Stuart C. McDonald:** None of us has asked yet about what I understand were the SAGE recommendations for managed hotel quarantine for all international arrivals earlier this year. Was the resistance to that purely practical, rather than in relation to the science? Where would we be now if that was the course of action that the Government had followed? Perhaps we could start with Christina Pagel.

***Professor Pagel:*** I am not sure that SAGE said, "This is what you should do." What they said was that is the best way, by far, of being sure of keeping out new variants. They said that back in January, and that stays the case. As to why it was not done, I don't know.

The travel industry is obviously a big part of our economy. I am guessing that is what played into it, as did people's wellbeing—people needing to travel and see friends and family. Personally, I do not think it is worth it for delta, and I do not think it is worth it for the next Greek letter, but that is my opinion. I don't know why they did not do it. It is difficult to do, and we have seen reports from the red list quarantine that they have done—there is sub-standard hotel accommodation and infection control.

We have seen from Australia that they have had breakthrough infections through poorly implemented quarantine and through infections via shared air spaces, as it is airborne. We have seen leaks going through. The recent delta outbreak in Sydney came from a taxi driver who carried a quarantined passenger from the airport to the hotel. He got infected and then that carried on infecting other people. We have seen in Singapore that vaccinated airport workers have caught it from customers and then passed it on. You have to think about everybody who people come into contact with, and that is very difficult.

Q1078 **Stuart C. McDonald:** On that point, Independent SAGE has criticised the standards of cleanliness, ventilation and the training given to the staff who are operating hotel quarantine. It seems that we have to rely on hotel quarantine, so how do we improve what is going on? How can we make this work?

***Professor Pagel:*** You make it work by recognising that it is not just about sticking people in a hotel room for two weeks and letting them get on with it. There are other countries that have done this, and there are countries that have done it very successfully. They are using slightly different approaches, but I would go to them.

One of the states in Australia—I cannot remember exactly which one it is—has what I consider the gold standard. In their quarantine facilities, they have fresh air gaps between people quarantining, because of the airborne-

based nature, whereas other states in Australia have had a lot of break-throughs, because they have less well managed quarantine facilities.

It is about seeing it as a system and thinking about the kind of infection control that you might do in a hospital. How are you going to stop people from coming into contact—whether that is cleaners, porters, drivers, security guards, everybody—and from catching it and potentially passing it on? It is about the will to do it.

The problem is that everyone is waiting for this to be over—so, "There's no point, it's almost over"—whereas I think we have to recognise that, as much as we want that to be true, it is not true. So you put in the work to do things properly. That is my view.

Q1079 **Stuart C. McDonald:** Adam Finn, first, another type of quarantine is home quarantine. NERVTAG has been critical of issues there, in particular when people share the house with others who are able to come and go.

I suppose there are also questions about enforcement. What is the point of home quarantine? Does it still have a role to play? How can it be improved? Secondly, I would also appreciate your thoughts on what I was just referring to there about SAGE advice on compulsory hotel quarantine for all international arrivals.

***Professor Finn:*** This is well outside my area of competent expertise, but I think that quarantine amplifies all the issues that—*[Inaudible.]*

**Chair:** We lost you there. Reception went a bit funny. Say that answer again.

***Professor Finn:*** Yes, sorry. I will try to be brief. Incidentally, Chair, I am afraid I have to leave shortly, because I have another meeting at midday.

Home quarantine is much more leaky than a managed situation in a hotel. It relies on people keeping to the rules and of course, as you correctly identify in your question, there is almost inevitably going to be contact between the person quarantining and other people in the household, so it is far from ideal. It probably serves some purpose, but we have to examine constantly the question of whether isolating people at home is working, and re-evaluate that in the context of travel or anything else.

**Chair:** Thank you. We are very grateful for your time this morning, Professor Finn. Thank you for joining us.

Q1080 **Andrew Gwynne:** I would like to look more closely at the operational border management issues facing UK port and airport operators. The Committee visited Heathrow a few weeks back, which was absolutely fascinating. I think we were told that, pre-pandemic, only about 14% of passengers were non-UK or non-EEA nationals.

We were told that checks would take an average of two to four minutes per passenger—that is about 25 or 30 passengers an hour—but that post pandemic, with the requirement to check Covid-compliant documentation, this takes an average of eight to 12 minutes per

passenger, and that is if they have their documentation ready to hand. That is four to eight passengers an hour, and it is even worse if a traveller does not have their documentation ready or it does not comply with the requirements.

May I ask Elizabeth Hegarty what her key concerns are about managing increased passenger numbers at Heathrow in the next six to 18 months?

***Elizabeth Hegarty:*** The processing capacity—the amount of people who can flow through the border at any given port—is a very simple equation, which is the number of passengers multiplied by the amount of work that the Border Force officer or the automated e-gate needs to undertake and the time that takes, or the transaction time.

We have seen improvements even since your recent visit, as around 60% of the e-gates at Heathrow have been upgraded to scan the passport, which is automatically checking the passenger locator form, within which is integrated the check on the procurement of the day two and day eight testing package, the pre-departure test and any managed quarantine, should that need to be referred to an officer.

For us, this is an additional check. Essentially, as an airport operator, we believe this to be an assurance of the 100% checking that is required upstream by the airlines and for which airlines are fined if there are any individual non-compliances or non-compliance more broadly. We see that the CAA reports really high compliance by those airlines.

As for the future, because so many requirements come forward it is about how we continue to improve. For example, about 70% of passengers at Heathrow pre-Covid, as you described, could not usually use e-gates—so, through the EU, UK and those countries permitted to be eligible to use the e-gates. That is a really high volume and that is a risk-based approach. And the additional checks need to be swiftly incorporated.

Government Departments need to work together across the locator form, which I believe to be the responsibility of the Department for Transport, the Home Office and perhaps even the NHS. However, this is—again—an assurance check, and that automation allows the volume to flow through that bigger processing capacity.

It is absolutely pivotal then that that automation works effectively. It has essentially been tested in a live environment, because of the pace of implementation. We are seeing improvements, but we are not there yet. It also needs to be supplemented with appropriate Border Force resourcing to deal with the residual workload that cannot be managed by the automated checks—for those who really need that human intervention, because there is a higher border security risk.

Q1081 **Andrew Gwynne:** On that, Elizabeth, do you have any evidence that the UK Border Force is prepared for increased checks and increased passenger numbers?

***Elizabeth Hegarty:*** The upgrade programme to the e-gates having been expedited is an indicator and we understand that recruitment for Border Force officers is under way.

We have seen redeployment of officers to meet the passenger demand as it returns in a very unpredictable way, let's say, across different ports in the UK. What we are really looking for at Heathrow, and I am sure at other UK ports, is the sustainable plan to give us confidence about what that processing capacity will be—therefore, what type of operation we should expect and plan for, so that we can make sure that we flow that all the way from the aircraft's departure into the UK all the way out through to the onward transport.

The border is one part of the arrivals journey and it is absolutely key when we are looking, even in low volumes, at planning that end-to-end journey, with the border being a pivotal part in the centre.

Q1082 **Andrew Gwynne:** Lastly from me, I just wondered how you see the passenger journey at airports changing in the long term as a consequence of the Covid-19 pandemic.

***Elizabeth Hegarty:*** As I mentioned earlier, we have been working as an industry. In the long term, there have to be some global solutions. We are a global industry and the industry has been working on, for example, the single token for passengers that I described earlier.

The International Air Transport Association, in partnership with Airports Council International, has had a programme called NXXT, looking at this type of passenger token, which could incorporate health status in the future.

Also, for us it is about how we manage our colleagues so that they feel completely confident moving forwards, not just with regard to Covid but so that we have the right facilities in place for them. At Heathrow we will be maintaining many of our physical measures to protect colleagues, regardless of whatever DfT guidance is published.

We also announced last week to all our colleagues and stakeholders that we will retain masks at Heathrow for the foreseeable future for both passengers and colleagues. We went early on masks before the rest of the UK. We felt that was the right decision and, as a physical barrier that is seen to be effective, we will continue with that.

**Andrew Gwynne:** Thank you.

**Chair:** May I thank all our witnesses for your time this morning? This is hugely helpful. It has given us much food for thought; there are no easy solutions and it looks like it is going to be a very bumpy 12 months ahead. But we very much appreciate the evidence that you have given us today.

Thank you to Christina Pagel and to Elizabeth Hegarty, but I particularly thank Professor Kelley Lee for joining us in the middle of the night; we really appreciate your time.