OFFICIAL REPORT
AITHISG OIFIGEIL

COVID-19 Committee

Thursday 25 February 2021

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

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COVID-19 COMMITTEE
7th Meeting 2021, Session 5

CONVENER

*Donald Cameron (Highlands and Islands) (Con)

DEPUTY CONVENER

Monica Lennon (Central Scotland) (Lab)

COMMITTEE MEMBERS

*Willie Coffey (Kilmarnock and Irvine Valley) (SNP)
*Maurice Corry (West Scotland) (Con)
*Annabelle Ewing (Cowdenbeath) (SNP)
*John Mason (Glasgow Shettleston) (SNP)
*Stuart McMillan (Greenock and Inverclyde) (SNP)
*Mark Ruskell (Mid Scotland and Fife) (Green)
*Beatrice Wishart (Shetland Islands) (LD)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Professor Michael Baker MNZM (University of Otago, Wellington)
Professor Siân Griffiths OBE (Chinese University of Hong Kong)
Professor Jason Leitch (Scottish Government)
Dominic Munro (Scottish Government)
Michael Russell (Cabinet Secretary for the Constitution, Europe and External Affairs)
David Stewart (Highlands and Islands) (Lab) (Committee Substitute)
Professor Mark Woolhouse OBE (University of Edinburgh)

CLERK TO THE COMMITTEE

Sigrid Robinson

LOCATION

Virtual Meeting

Scottish Parliament

COVID-19 Committee

Thursday 25 February 2021

[The Convener opened the meeting at 09:00]

Next Steps

The Convener (Donald Cameron): Good morning, and welcome to the COVID-19 Committee's seventh meeting in 2021. We have received apologies from Monica Lennon MSP, and David Stewart MSP is joining us as a substitute; I welcome him to the meeting.

This morning, the committee will take evidence from three witnesses on Covid-19: next steps. I welcome Professor Michael Baker MNZM, who is professor of epidemiology at the University of Otago, Wellington; Professor Siân Griffiths OBE, who is emeritus professor at the Chinese University of Hong Kong; and Professor Mark Woolhouse, who is chair of infectious disease epidemiology at the University of Edinburgh.

I am advised that Professor Baker will be slightly late to the meeting, for technical reasons, but in any event we will commence. We have a lot to cover this morning, so we move straight to questions. I note that Professor Griffiths needs to leave the meeting by 10 am.

Members will have eight minutes each to ask questions of witnesses so, as ever, I ask that we keep our questions and answers as concise as possible. If there is time for supplementary questions, I will indicate that, once all members have had a chance to ask their questions. If members can say to whom they are directing their questions, it will assist the broadcasting team. I ask witnesses to wait a moment for their microphone to be switched on before speaking.

I will ask the first question. What are your views on the various strategies that are available to deal with Covid-19? Which strategy is best for Scotland, and how does it fit in with wider international comparators? I ask Professor Woolhouse to start.

Professor Mark Woolhouse OBE (University of Edinburgh): Thank you, convener—that is a very broad question to start with. The current situation is that the epidemic appears to be in decline in Scotland. The numbers of cases, hospitalisations and deaths are coming down. The vaccine roll-out is going extremely well; the numbers of those who have been vaccinated have exceeded most people's expectations of a few weeks ago.

There are two other important points to make about the vaccination programme. The first point is that the coverage is very good. The take-up of the vaccine has been very high—in the most vulnerable groups that have been vaccinated to date, the take-up rate as a percentage is well into the high 90s. A few weeks ago, when the vaccination roll-out programme started, there was concern that take-up might be a lot lower, so that is very good news indeed.

Turning to the second point, the other good news that has come through in the past few weeks concerns the performance of the vaccine. Only this week, my colleagues at the University of Edinburgh published a paper on the efficacy of the Pfizer and AstraZeneca vaccines in Scotland. The numbers are still small, but it looks as if the vaccines provide about 80 per cent protection in terms of keeping people out of hospital, which is very good news. All the indicators are very positive.

As we all know, the Scottish Government has a policy of cautious relaxation, which is driven by data. My interpretation of that position is that the data are looking very good, so I hope that it will be possible to relax somewhat ahead of the schedule that we might have had in mind a few weeks ago. The signs are very positive.

Your question implies consideration of where we are going to end up from here. I will give two brief comments on that. First, the common goal—there has been a lot of discussion on this in the epidemiology community in the United Kingdom—is that by September, we would like to be in a position in which we are very confident that winter 2021-22 will be a lot better than the winter that we are going through now. There is a lot of work to be done between now and September to ensure that that is the case.

Secondly, we are fairly clear—as the chief medical officer for England and many other commentators have said—that, during winter next year, we will be living with some level of Covid-19. We cannot yet say with certainty how good or bad the situation will be, but there will be Covid-19 in the UK next winter. I will stop there, but I can go on in more detail if you wish.

The Convener: Thank you for that. I ask the same question of our other witnesses, starting with Professor Griffiths.

Professor Siân Griffiths OBE (Chinese University of Hong Kong): I thank the committee for inviting me to the meeting. I concur with everything that Professor Woolhouse said. Progress across the UK, and in Scotland in particular, has been especially good in terms of vaccine uptake. In addition, we have learned some

lessons, such as the need to focus on care homes.

Nonetheless, I will raise a few additional points. First, we need a global approach. Yesterday, the first vaccines were sent to Ghana as part of the COVAX programme, which is really important. We could have less Covid in our country, but if Covid remains in other parts of the world, we will not prevent the spread of, or eliminate, the disease. We have to have a global perspective.

Secondly, we need to continue to look at inequalities. Around the world, and across the UK, we have seen that areas of poverty and deprivation, and areas with certain groups, such as ethnic minority groups, have experienced higher rates of infection and hospital admissions. The figures for Scotland that Professor Woolhouse quoted are reassuring, in the sense that the inequalities gap does not appear to be so large in Scotland, but that does not mean that we can relax. If we are going to try—[*Inaudible*]—we need to continue to think about the structural inequalities, and a whole set of issues such as ways of working, occupations, housing and diet. We need to remember that Covid is not just a disease—it is part of a broader social approach that we need to adopt for the future.

Finally, if we are going to contain Covid in the winter, we need an excellent test and trace programme in every country, and in the UK and Scotland in particular. We need to be able to identify cases; do the genomic sequencing, which we in the UK are particularly good at, through the COVID-19 Genomics UK Consortium; and ensure that, as soon as cases start to emerge, there is isolation, contact tracing, quarantine and an understanding of where the disease might have spread so that we can stop the chain of transmission. In that way, we will be able to co-exist with Covid, which the chief medical officer for England, and the other chief medical officers, think is the most likely situation.

The Convener: I welcome Professor Baker to the meeting, and ask him the same question.

Professor Michael Baker MNZM (University of Otago, Wellington): Greetings. Could you repeat the question, please?

The Convener: Of course. I am sorry—I should have done that. My question was very broad. It was about the various strategies that are used internationally to approach Covid-19, and which strategy you feel is most appropriate for Scotland.

Professor Baker: Obviously, I am presenting a perspective from the other side of the world, and New Zealand has pursued an elimination approach from very early on in the pandemic. I understand, from talking with colleagues in Scotland, that you were very close to achieving the same goal at certain points.

The essence of that approach is to aim to have no Covid transmission in the community, and New Zealand has used three broad approaches to achieve that. The first involves managing borders, with very tight quarantine and testing. We then use measures to decrease transmission at a population level through physical distancing, the use of lockdowns in a short, decisive way and, more recently, mask use.

The third major strategy has been testing and tracing. We initially used quite an intense lockdown for five weeks, followed by a less intense lockdown for couple of weeks, and we emerged into a virus-free country. That gave us time to build up our testing and contact tracing system. We now get occasional incursions of the virus, mainly through border failures, and we can manage those quite effectively with testing and contact tracing. Another major strategy is to have in place a social safety net to support the most vulnerable groups, who are affected mainly as a result of the intervention itself.

The core essence of our approach is the unifying goal of having no transmission in the community. We are now starting to roll out vaccines. We are a bit behind the UK on that, but vaccines are now being used selectively for border workers to improve border biosecurity.

The Convener: I see that Professor Woolhouse wants to come in. Do you have any observations on that approach and how it applies to Scotland in particular?

Professor Woolhouse: Yes, I do. I just want to correct one slight misinterpretation in what was said. Scotland was not close to elimination at any stage during the epidemic. We had low numbers of reported cases during the summer but, at the same time, the modelling groups were estimating the number of cases that were present, using a method that has been very well validated since—it works, so the estimates are reliable—and those estimates showed that we never fell below 500 cases in Scotland. There is some uncertainty around that, but that is the best estimate.

More difficult still, the majority of those cases—perhaps 90 per cent of them—were not reported. The reason is that, at that stage, the virus was circulating in particular in groups of young adults, who do not show many symptoms. As soon as the testing capacity increased in August, there was a dramatic increase in the number of cases that we were detecting in those groups, and we proceeded.

I agree with Professor Griffiths on the genome sequencing work. COG-UK is a world-leading facility, and it will be valuable for Scotland as we

move forward. That work showed quite clearly that the lineages that were present in the first wave in Scotland were still present in the second wave. The sequencing was not examining that many cases at the time, so they were not always found, but they were present, so we were not close to elimination in Scotland.

The Convener: Is elimination a realistic strategy for Scotland?

Professor Woolhouse: In the short term, it is not. We are still trying to manage the current wave. In the medium term, it will depend very much on the performance of the vaccines that we have now, and in particular on whether they are able to reduce the reproduction number by stopping the spread of infection. They do that in two ways: they either stop people getting infected in the first place or, if people get infected, the vaccines reduce the rate at which those people pass infection on, usually because they will have a lighter viral load in the upper respiratory tract.

It may be that the vaccines are very good at stopping transmission, in which case we have the prospect of reaching the herd immunity threshold. However, that would be difficult—the current estimates show that we would have to immunise at least 75 and perhaps 80 per cent of the population in order to do that. If we manage to do it, and if we continue to maintain a very high level of herd immunity, the virus will not be able to circulate freely. That does not mean that there will not be outbreaks—if the virus is introduced through any route, it will be able to transmit in the unprotected fraction of the population—but, if we can reach the herd immunity threshold, those outbreaks should not develop into a full-blown epidemic.

Right now, we do not know whether that can be done. As I said, there are some grounds for optimism, but we cannot be fully confident that the herd immunity threshold is reachable. If it is not, we will have to reach some sort of position in which we are living with a balance between the rate at which the virus is spreading in the community and the rate at which we are vaccinating people. We would hope that there would be a low level of continued infection but, without reaching the herd immunity threshold, elimination would not be practical.

The Convener: I thank you all for those answers. We come to questions from my committee colleagues, starting with David Stewart.

David Stewart (Highlands and Islands) (Lab): I will build on the convener's questions—I will start with Professor Baker, and then I would welcome contributions from the other witnesses.

Professor Baker, in your webinar for the Usher institute, you said that elimination seems to be more effective than suppression or mitigation. Can you explain and expand on that point?

09:15

Professor Baker: It depends on the criteria that we use to judge effectiveness. In New Zealand, we have had very low case numbers and very low mortality, and our economy has performed well and is recovering well, because there is a high degree of certainty that elimination has been achieved. As with other countries that have pursued elimination successfully, the health outcomes are much better, as are the economic outcomes.

In New Zealand, we have spent very little time under lockdown—in fact, our time in lockdown is among the shortest of the countries in the Organisation for Economic Co-operation and Development. That is simply because, by having short, sharp lockdowns, we have eliminated the virus and focused on keeping it out at the borders, and that strategy has been very beneficial. Based on those criteria, it has been more effective than pursuing suppression.

David Stewart: Would the other witnesses care to comment on my question?

Professor Griffiths: I checked with my colleague Professor Gabriel Leung on the situation in Hong Kong, which would say that it is following a zero Covid strategy. It is building on the experience of severe acute respiratory syndrome—SARS—but it is also having to do frequent lockdowns in small areas.

Hong Kong does what it calls "ambush-style lockdowns". It is geographically very different from Scotland, and it has a very different, and homogeneous, population. At present, it has 40 cases, and it knows that 25 of those cases involve the British strain. It knows a huge amount of information about the cases, but the disease keeps coming in—for example, through the Filipino helpers, who bring in the disease from the Philippines.

Across the border in China, there are rigorous controls in place. Everybody has to go into hotel quarantine if they go into the country; I think that the same applies in New Zealand. The quarantine time is two weeks, plus one week—so, three weeks—if you are not a Hong Konger. Those criteria are very rigid and strict, and if you are going to drive through that policy, you have to accept that. We do not have such a policy in place here, and the question is whether we need it in place, in particular now, as we are starting to lift lockdown.

David Stewart: Professor Woolhouse, do you have any comments?

Professor Woolhouse: Yes, I do. I thank Michael Baker for his description of what has happened in New Zealand. The thing to remember is how New Zealand got into that position in the first place. Professor Baker will correct me if I am wrong, but I have checked this, and I think that I am right. New Zealand implemented in mid-March the type of strict border controls that Professor Griffiths just described, and it went into full lockdown on 25 March to try to eliminate the few cases that had got into the country at that time. As a result of those actions, New Zealand has arrived at its current position; I think that we would all agree that it is now one of the best places in the world in terms of managing its local epidemic. It did that through actions that took place during the first stage in March.

If the UK had put border controls in place in mid-March, as the UK Government Home Secretary has suggested in the past, it would have been far too late. The UK's epidemic was seeded in mid-February, around half term, by large numbers of cases—thousands of cases—that were brought in from France, Italy and Spain. Even if we had put border closure measures in place when New Zealand did, it would have had very little effect—it would have been much too late.

The date on which New Zealand went into lockdown was 25 March, which was after the UK went into lockdown on 23 March. New Zealand is very fortunate—I am very happy that this is the case—as its epidemic was seeded way behind the UK's epidemic, so it was able to take actions at the time that it did and still achieve the effect that we have seen. That is the main reason why New Zealand is different: the early history of the epidemic.

With regard to achieving elimination in Scotland, the UK or any other country, it is worth looking at who else has done that. This is a very easy comparison: let us compare the first and second waves, because those waves have been pretty universal around the world in countries that have Covid. No country with an epidemic the size of Scotland's epidemic has managed to have a second wave that was smaller than the first wave; they all had bigger second waves. No country with an epidemic half the size of Scotland's has avoided a bigger second wave, and nor has any country with an epidemic one tenth the size of Scotland's. There appears to be no route—or at least no route that any country in the world has found—to get from where Scotland is now to where New Zealand is now. The route was open back in February. We missed our chance to be like New Zealand back in February. By March, when New Zealand took the route that it did, it was already too late for us, and now it is far too late.

The possible game changer, as I mentioned in my previous answer, is the vaccines, and whether we can achieve the herd immunity threshold, but that is a different ballpark entirely. There is no way now that Scotland can get to where New Zealand is now.

David Stewart: Thank you—those answers were fascinating.

My final question is this: would it be fair to describe the strategy in the UK and Scotland as one of suppression? I will throw three different statistics at you; I understand that they could be spurious and unconnected. Yesterday's edition of *The Times* quoted a University of Oxford study, which said that the UK has

"one of the strictest lockdowns in the world".

In fact, it is the third strictest in the world—for completeness, I note that we were beaten by Venezuela and Lebanon. Secondly, we have the second highest vaccination rate in the world—as you will know, Israel has the highest rate. I think that we are at around 26 per cent; that is the last figure that I have. Finally, the last figure that I looked at—I accept that it could be out of date, or there could be a lag—showed that the death rate for Covid-19 in the UK was the highest per million in the world.

I appreciate that I can throw three statistics together and they may not be connected, but I wonder whether the witnesses can draw anything from them with regard to the suppression strategy in Scotland and the UK. Where do we go from here?

Professor Baker: I was very interested to hear Mark Woolhouse's comments. One country has provided a model for a return from quite an intense pandemic wave, and that is Australia. It had a border breach that resulted in several thousand cases and 800 deaths in the state of Victoria. For a period, the rate there was higher than the rate in the UK; the state had a prolonged lockdown of around eight weeks, and then emerged into a virus-free country. That response was driven by modelling, which showed that it would work, and it was followed by a decline in rates.

I do not know the extent to which researchers in Scotland have looked at the experience of Victoria in Australia, but it is encouraging to see that it is possible to return from very high rates of disease. In Victoria, it was thought that the situation might be unrecoverable, but the approach succeeded. I would be interested to hear from your researchers in Scotland about whether they have looked at the Victorian experience.

David Stewart: Professor Griffiths, do you have anything to add?

Professor Griffiths: I was just looking to see whether there was a link between the statistics that you quoted. As you said, however, they are simply three statistics. One thing that I learned when we did the inquiry into SARS in Hong Kong was that you need to take a point, look back—objectively, without attaching any moral blame—and then look forward.

It is very easy, with something such as the highest death rate, to start to criticise before you have taken a calm look and asked, "Why did this occur? Is this a real statistic? Are we comparing like with like across different countries?" and so on. We have to place those statistics in context. Having the second highest vaccination rate is something for us to celebrate, because we know that we have a fantastic vaccination programme in this country—all parts of the UK are overachieving on the vaccination rate. That is a very good statistic. As Professor Woolhouse said earlier, we need to look at the impact over time. As we get higher levels of vaccination, and we move further towards herd immunity, it will allow us to do different things. It is hoped that the death rate per million will start to go down, so that, if we took a cut in three months' time, it would show that we would not have the highest rate.

On the question of countries with the strictest lockdowns, we have a pretty strict lockdown here, but I doubt that it is as strict as the lockdown in Wuhan, which was pretty strict. We do not have so much mandating in our lockdowns—a lot of it relies on voluntary compliance, which is actually a good thing when it comes to releasing people from lockdown. I am not sure that the statistics that you quoted create a picture, but they give us insights at a certain point. We might have an inquiry, at some point in time, that does not attach blame but looks at what we do next time. For example, Hong Kong brought in travel restrictions in January, as soon as it saw that there was a SARS-like epidemic, because it had learned from the SARS epidemic in 2003. When we look forward, we will have learned many things—for example, on care homes—from countries around the world, on which we would need to take different strategies. Individual statistics give us pointers to things that we need to look to for the future.

Professor Woolhouse: We have had several lockdowns, including two full lockdowns, in Scotland, but they have not managed to achieve elimination. The difference with the experience in Victoria is that we were starting from a higher base. Our modelling would suggest that in order to get from where we are now to elimination, via the mechanism of lockdown—leaving the vaccines out of it for the moment—we would have to stay in a very strict lockdown for very many months. You cannot have an elimination strategy—in Australia, Scotland or anywhere else—and also relax measures. Those are contradictory aims. If you were to go for elimination, you would have to be in lockdown for a very, very long time, given where we are starting from. The fact is that we were not ever starting from the same position as Australia or New Zealand.

With regard to the death rate, I agree with Professor Griffiths—we will have to reflect on that carefully. I am very concerned—I have said this many times—that the death rate in the UK is high because we have concentrated so much on lockdown and other ways of trying to suppress the virus. We have taken the approach that the main way of protecting the people who are vulnerable to the virus is to try to suppress transmission in the whole community. I and colleagues at Health Protection Scotland looked into an analysis of the death rate in the first wave. We counted up the number of deaths that occurred—I have to be very clear on this—because of infections that were acquired after the 23 March lockdown was in place. That included people who got infected after the lockdown started. Our best estimate was that between half and 75 per cent—three quarters—of all the people who died during the first lockdown got infected after lockdown began. You might remember that there was a long tail to the epidemic, so there were infections happening there—there were many, many of them. The majority of people who died did so because of infection that they got in that tail.

What that tells me is that we did not pay nearly enough attention to doing things beyond lockdown, such as protecting the vulnerable in care homes and in the wider community. We simply did not do that enough. All that we had was shielding, which—according to most people—was not a particularly effective policy, and a little bit of extra advice for the over-70s. We could have put so much more effort into protecting the people who needed it. We now recognise that we did not do enough to protect those in care homes. To come back to the point that Professor Griffiths made about the need for reflection, we need to recognise that the same is true for the vulnerable people in the community—we did not do enough to protect them either. Lockdown did not save the majority of those people, and we will have to reflect on that very hard.

David Stewart: That is helpful. I thank all the witnesses for their answers to my questions.

09:30

Mark Ruskell (Mid Scotland and Fife) (Green): What is your judgment on how easy it will be to suppress the virus as we move forward, given that we are seeing genetic mutation? At present, it seems that the vaccination programme itself is exerting a selection pressure on the virus. I

know that a bit of crystal-ball gazing is required, but what is your judgment with regard to how quickly the mutations can arise and what their impact will be? Perhaps Professor Baker can start.

Professor Baker: That is a very good question. Inevitably, the more infectious variants of the virus will have a selective advantage and so will become dominant. That is just the nature of the biology and the natural selection that occurs. That will favour more infectious variants, but it may also favour those that can evade the immunity from vaccines. The extent to which that will occur is not known.

We felt that it was very important to have continuing public health measures in combination with vaccines, and to clarify the ultimate goal. To reduce the selective pressure, we want to have minimal circulating virus, and that—again—is an argument for elimination. Even if it requires a sustained effort, there are huge additional benefits, over and above saving lives in the short term, in reducing opportunities for viral evolution.

Professor Griffiths: I am not really an expert on viruses and viral transmission. We saw the Kent virus taking off in December, and we know from yesterday's briefing that 85 per cent of cases in Scotland involve the new variant. The Kent variant took off at the time when we were reducing lockdown and moving towards Christmas, and the most recent peak occurred because the virus took hold. We have had a demonstration, therefore, of what happens when a new variant comes along and takes off.

The ease of suppression will depend on how flexible the vaccines are and whether they can be tweaked to cover all the variants as they emerge. Oxford is taking the approach that that can be done; the teams are currently working on how to ensure that the vaccines are alert to the current strains. We need to keep in place high levels of vaccination and low levels of virus in the community, and we need to understand the nature of the virus that is circulating. Mark Woolhouse and I both mentioned COG-UK, the genetic sequencing facility in the UK, which is shared across the countries of the UK and more globally. It is a world-leading facility, as Anthony Fauci from the United States said yesterday.

We can see that we need to keep the vaccination programme going; keep the social distancing measures in place as long as we need to in order to suppress the virus and keep the R rate down; and continually monitor the situation. We need a dynamic policy that understands what variants we have. That raises the issue of needing a global approach. There is no point in our understanding the virus really well if we have people travelling into the country, or if we travel. There is a whole question around travel and opening up borders and the global economy. All those different things need to be thought about as we move forward, in the context of the need to suppress transmission of the virus.

Mark Ruskell: Professor Woolhouse, do you want to add to that?

Professor Woolhouse: Yes—there were a couple of points in your question. You asked whether the new variant can be suppressed in Scotland. The epidemiological situation in Scotland right now is quite delicate and complex. The reduction in cases that we have all seen over the past few weeks is mostly a reduction in the old variants. The new variant has declined slightly, but it has more or less held steady.

When I was first alerted to the new Kent variant back in December, I was very concerned that it was going to be extremely difficult to suppress it through lockdown. We said at the time that we were on a knife edge in respect of whether we could do it or not, and that is exactly what we are now seeing in the data: we are on a knife edge in suppressing the new variant. To go back to an earlier part of the discussion, that has implications for the elimination of the newer variants through suppression methods such as lockdown. I am not clear on how we could achieve that—we are barely driving down the new variant at all. At the beginning of the second wave, the new variant was relatively rare in Scotland, but it is now by far the dominant variant, and it will soon take over.

That brings me to another point. The Scottish Government's very nice background document, which supports the recent statement on the road map, contains a picture that shows the sequence of variants over time across the UK. What we see is one variant after another—one wave of different variants after another. That is what you always see when you look at these kinds of genome data on an endemic virus or a prolonged epidemic: waves of different variants coming on. We will have to deal with that for the foreseeable future. I absolutely agree with the comments from Professor Griffiths that we need sustainable ways to deal with the new variants. Adjustments to the vaccines would seem to be the primary way that we have of dealing with that.

I will make one comment about what drives the evolution of new variants. It is actually quite complicated. It should go without saying that, if we have more cases, there are more opportunities for evolution to happen, but that is not quite how it works. Let us look at the evolution of the new Kent variant. Our best understanding of that variant is that it arose in a single patient who was infected with coronavirus, was immunocompromised and was being treated with an antibody therapy. It was a very special case, and a large number of mutations were able to happen in that one patient.

That is not a typical case—it is a particular combination of circumstances, which we can learn about and understand. The more we understand about where the evolution of these new variants happens, the more we can take much more targeted measures. We can highlight procedures or patients that we have to be careful about. For example, monitoring vaccine failures is an obvious way to see whether there are particular circumstances in which those variants are arising.

A final point of interest on the evolution of the new Kent variant is that it happened in September, but we did not even see it as a problem until December, several months later. Variants arise at low levels and they circulate. There are literally hundreds—globally, there are thousands—arising all the time; they have to be sifted, and it must be decided which ones are of concern. At present, Public Health England is watching a dozen or so variants of concern, and the Americans were reporting a new variant in California only the other day. All those variants have to be monitored, and COG-UK will help us to do that. Nonetheless, they will arise and circulate, and we will probably not recognise them as a problem until they are already relatively well established. We therefore have to find a sustainable way of dealing with that reality.

Mark Ruskell: Thank you. Time is tight, so I will hand back to the convener.

The Convener: Our next questions are from Beatrice Wishart.

Beatrice Wishart (Shetland Islands) (LD): The phrase "vaccine passports" is starting to feature more and more in public discussion, but I want to dig into what is actually meant by it. Some people think that it means having a vaccine before travel, whereas others might understand it to mean needing a vaccine before gaining access to other things that we are currently restricted from doing, such as visiting vulnerable relatives in a care home or going to the pub.

What do you understand by "vaccine passport", and in which situations might that phrase be used? I go to Professor Griffiths first.

Professor Griffiths: As you say, the phrase "vaccine passports" is thrown around rather a lot, without any real understanding of what it means. The word "passport" tends to imply international travel, or any travel, because that is when we usually use the word in our vernacular.

We can think about vaccine passports in two ways. One way could relate to the ability to travel. For international travel, it may not be a passport; other countries may require us to show some proof that we are immune. At the national level, for use in the community, it would be about the ability to access various places such as theatres, pubs and restaurants.

That is a very broad-brush view—there are many issues to consider. Vaccine certification is extremely complex, and there are ethical issues around inequalities. If vaccine certification was initially about access to care homes, as you said, it would, at this point, mean that younger people would be disenfranchised from visiting their relatives, because they do not have access to the vaccine. They cannot show that they have been vaccinated, because they are not in the groups that should be vaccinated. You might introduce a process whereby people have to be tested, or have proof that they have had the vaccine, before they can go into care homes.

Another issue that comes up, aside from the inequalities, concerns people who will not come forward for vaccination. Will they be disenfranchised from travelling or from taking part in elements of society? All of that would need to be thought through very carefully before you were to talk about mandating vaccine certificates and making them a legal requirement. They could be a voluntary requirement, but that would be very complex.

That is why Michael Gove is heading up a review for Boris Johnson in England to look at the various issues. The Royal Society has published a report, "Twelve criteria for the development and use of COVID-19 vaccine passports", that lays out all those issues, including the legal and ethical issues that would need to be addressed. A group in Oxford has also produced a report on the topic. There is quite a lot of thought going on, before we rush to say that we must have vaccine passports. It is not as simple as saying, "You're vaccinated."

The final point is that, just because you have been vaccinated, that does not mean that you have responded. When we talk about percentages of success, we are talking about a population-based response. It is a very complicated area that could induce more inequalities in a situation that, as I said, already has many inequalities.

Professor Woolhouse: I do not have a personal view on the mechanics of creating a vaccine passport and how it would work in practice, because it is not my area of expertise, but I can make some comments on what it might achieve. In Scotland, and in the UK, our whole strategy has for so long been about suppressing the virus, and that has been interpreted to mean that everybody in the population must reduce the number of contacts that they make: the number of times that we meet other people in circumstances in which we might pass on the virus. That means that we have had to restrict activities and day-to-day life in a fundamental way, as we have all seen. There has been much less emphasis on how, rather than restricting the number of

contacts, we can simply make those contacts safer.

I am an epidemiologist, and I can say that those two things are equivalent. You can halve the transmission rate of the virus—suppress the virus by 50 per cent—by halving the number of contacts that are made, or by halving the risk per contact. You can work to make those contacts safer. That is what all the personal protective equipment and the hygiene measures, all the barriers that we see in retail and in the hospitality sector that represent the effort that is put in to try to make facilities safe are about: trying to make contacts safe.

We can still have contacts, but they will be safer. They will never be completely safe, just as the vaccine will never guarantee 100 per cent that we cannot get infected and pass the infection on, as Professor Griffiths pointed out. Such measures can do enough, at a population level, to drive down levels of infection without so many restrictions on what we can do.

09:45

Some kind of notice that says whether someone has been vaccinated absolutely reflects the chances that they will pass on an infection if they have a contact. Incidentally, prior exposure to the virus does the same. It does not provide 100 per cent certainty—there are no guarantees—but it is safer. For example, if I were a vulnerable person in my home and I was having visitors, I would want them to be vaccinated. That would make the contact safer for me, as a vulnerable person—it is logical. That can be done through testing as well—if you test negative, there is obviously more chance that you are virus free. Immunity passports, vaccine passports and negative test results all decrease the chances that a contact will present a risk; they just do not do it to 100 per cent.

I do not feel confident in talking about the mechanics of making that work in practice but, as an epidemiologist, I can say that making contacts safer in that way will have an enormous effect on how well the virus spreads in our communities.

Beatrice Wishart: Thank you—that is a helpful response. Perhaps Professor Baker can tell us whether such measures have been discussed in New Zealand.

Professor Baker: The two previous speakers summarised the arguments extremely well. In New Zealand, we have not yet had that debate—we are hoping that other countries will resolve those issues for us—partly because the quantity of vaccine for use in our country is not yet very high. Nevertheless, we are watching the debate with a huge amount of interest.

One of the key parameters on which we still await confirmation is the effectiveness of the vaccine in preventing onward transmission. I know that the evidence is starting to firm up on that, and we are assuming that, if there will not be sterilising immunity, there will be something close to it, but we are all waiting to have that confirmed.

Beatrice Wishart: My second question is about island communities and the need to treat them differently. That is an on-going conversation in Scotland. I represent an island community, which has lower levels of prevalence than our mainland counterparts. Do you know anything about other island communities and how they have featured in national conversations? I am thinking about what might have happened in New Zealand or Hong Kong.

Professor Baker: The analysis of the experience of islands has been very incomplete globally; I have not seen much published work on that. In the Pacific, exclusion of the virus, which is a variation on elimination, is the dominant strategy. That approach is currently protecting about a dozen Pacific island states. As soon as they became aware of the virus, they essentially lifted the drawbridge and put in place robust border control measures. Those were even more robust than the measures in New Zealand, and they have been extremely successful.

However, there are some tragic examples, such as Tahiti and French Polynesia, which in the end gave way to a lot of commercial pressure to open up to tourism, and have hence had quite severe outbreaks. Of course, they then did not get tourists, because tourists did not want to come to a country with an uncontrolled epidemic. Iceland has had some well-documented experiences with varying levels of control at the border. I also understand that a number of islands in Canada and some other places, such as the Channel Islands, have succeeded in excluding the virus entirely.

Beatrice Wishart: Professor Griffiths, could I get your view on that?

Professor Griffiths: Hong Kong has quite a large land border with China, but it behaves as an island, in a way. As I said, Hong Kong introduced border controls really quickly, and it moderates the number of people who are allowed in and out, depending on the number of cases that are recorded. It is talking about making a travel bubble with Singapore, which also has island status, although it has a land link. Hong Kong is looking at beginning to try to stimulate tourism and travel by matching up with other countries. However, because it is going for zero Covid, it will want to match only with other places that are currently doing the same.

Hong Kong used to be a global hub, but its economy has really suffered. Some of the airlines there have gone out of business, as flights are down to something like 1978 levels. There is a whole set of issues that go with being an island, and an island that thrives on tourism, and how you should act differently because of that. Hong Kong has gone for very strict monitoring, and it is looking proactively at how it can create new links, in the first instance, with places where rates of Covid are very low.

We need to take an island view, and think about what is happening on our island. I believe that the Scottish road map allows for local variation. Although an area may be in level 3, an island within it could argue for being in level 2, which would allow the tourism industry to restart, if that is an issue.

Beatrice Wishart: It is an issue. Professor Woolhouse, do you have any views on that?

Professor Woolhouse: I can add a little to the commentaries that we have heard by talking about Scotland's experience last summer, not just in the islands but across the Highlands and Islands. Tourism was allowed over the summer, albeit in somewhat restricted ways. That experience proved that it is not just opening up access to tourists that counts, but what the epidemiological situation is in the Highlands and Islands or wherever it may be.

Last summer, I heard a lot of voices saying that all the tourists from England were a potential epidemiological threat to the region. I did not think that tourists would be a threat and, as it turned out, they were not. The Highlands and Islands were very busy last summer, as anyone who was in that part of the world will know. I spoke to some people in the hospitality industry there about their situation, and they said that they were very busy. However, there were no outbreaks of any significance that were linked to tourists. There was no epidemiological problem in the Highlands and Islands during last summer's tourist season.

When the sequencing results came in later in the year, they showed that a small number of lineages of virus could be linked to England—they were not necessarily from tourists, but they could have been. However, that was 6 per cent of the total, so it is clear that that was not where Scotland's viruses were coming from. It proved possible, last summer, to open up the Highlands and Islands to a significant extent without having a major epidemiological problem. Now that we have the vaccine in place, it is not clear to me why tourism would be more of a problem this summer—if anything, it would surely be less of a problem.

You could wall off the islands if you wished, and stop tourism, but you would have to think carefully about the balance between the public health gain and the loss of income from tourism and other activities if you did that.

The Convener: Thank you for those answers. The clock is ticking, so we will move on to questions from Annabelle Ewing.

Annabelle Ewing (Cowdenbeath) (SNP): Thank you for joining us. My first question is for Professor Woolhouse. First, I will pick up on the last point and say that I am not aware that anybody is talking about walling off islands. Rather, there is a real desire to see what can be done to ensure that our tourism sector can restart and get on with what it does best.

I will go back to a point that Professor Woolhouse raised at the beginning of the session. He suggested that steps need to be taken by September this year so that we can be confident that the winter of 2021-22 will not be as bad as the winter of 2020-21. Can you outline the specific steps that need to be taken, to that end?

Professor Woolhouse: Next winter we want neither a large-scale resurgence of the virus, nor—we absolutely do not want this—any more lockdowns. I think that everyone is agreed on that. We know that the mechanisms that we have in place beyond vaccination reduce the likelihood of our going into lockdown.

Professor Griffiths outlined this in her opening comments, but it is worth underlining. We absolutely must emphasise the importance of self-isolation of cases and their contacts. Next winter, the test and protect system must be working at the best possible level, because there will be outbreaks that we will have to contain through self-isolation. We will have to ensure that people are willing and able to self-isolate when they are required to do so.

In recent months, there has been a lot of talk about the concept of supported self-isolation, which I fully support. That might involve adopting models such as that which is used in New York, where support is so comprehensive that people who are asked to self-isolate are even provided with a dog-walking service. There is much more that we can do to support, and therefore to encourage, people to self-isolate when we need them to do so.

Secondly, we must, in the first place, actually find the people who need to self-isolate. That is critical. My group has done some work on this, as has Health Protection Scotland, and work has been done in England, where the results were similar. Current estimates show that we are finding fewer than half of cases; the numbers that are reported by the Government every day represent

fewer than half the number of cases that are occurring in Scotland. That assessment is very well validated by active surveys by the Office for National Statistics on how much virus is present, which give us the one in 100 or one in 150 figures that we see. Those surveys confirm what I have just said: that we are probably not finding even half the cases in Scotland. It is as though we are fighting the epidemic with one hand tied behind our back. We cannot assume that all those cases are self-isolating, and it is clear that their contacts are not all being traced. Our main weapon for suppressing transmission of the virus is only working half as well as it should be, because we are not finding the cases in the first place.

Those people are not coming forward voluntarily, so there are a couple of ways in which we can find them. An interesting recent study showed that a lot of people did not know that they had Covid-19. Some cases were genuinely asymptomatic—they had no symptoms. I will come back to those in a minute. Some, however, simply had the "wrong" symptoms—not the symptoms that NHS 111 or whatever advertises that we should report—so they did not recognise what they had. There is a little bit of disagreement among epidemiologists as to how much difference it would make, but it is clear that if the categories of symptoms were to be broadened so that we caught those cases, that would make some difference.

The asymptomatic cases are very difficult. The only way we have of catching them is through active mass testing. I hope, therefore, that by September we are much more committed to testing in the community on a larger scale than we have been doing, even though the technology has been available since last November. That will help enormously. I describe the approach as "test on request"—people who are likely to do something that might involve contact with cases and could spread the virus should be tested first.

Such testing is how the Scottish Premier League football clubs manage to undertake their day-to-day activities. We could extend that approach much further to catch many more cases, in particular in high-risk settings. We need to build on self-isolation and on testing, which are the essential pillars of a sound response for next winter.

Annabelle Ewing: I thank Professor Woolhouse for that comprehensive and interesting response.

I will bring in Professor Baker, and then Professor Griffiths. After they have spoken, perhaps Professor Woolhouse can come in on my next question, to which his expertise is relevant.

Face coverings and 2m social distancing are currently part of our lives, day and daily. Many people are asking whether that is the future, or whether there is any possibility—and if so, within what rough timescale—of relaxing those measures. Professor Baker, what is your view on that?

10:00

Professor Baker: In New Zealand, we currently have quite a different context and a different goal, which means that we use the approaches differently. At present, we have no circulating virus, so all the emphasis is on our borders, and—in the event that there is a border breach—on our back-up systems, which include very high-volume testing in the community. New Zealand is now in the position in which a single case in the community is headline news and results in a very intense response. The context is so different.

As we have come to understand the virus better—in fact, tomorrow it will be exactly a year since the virus first arrived in New Zealand—we have moved from using crude methods such as very strong border shutdowns or quarantines and intense lockdowns to our current four-levels system, which includes sub-levels. We can now use high-volume testing, contact tracing and a lockdown that is not really a lockdown at all—it is about stopping spread with physical distancing and use of face masks. That approach is selective and works very well, but you have to have the two together. What Professor Woolhouse described is a logical progression from that, but we still need the other measures. We still need an alert level—that is what we call it in New Zealand—to dampen down transmission so that the contact tracing system is not overwhelmed. However, it has not been overwhelmed for the best part of a year now.

Professor Griffiths: I lived for many years in Hong Kong where, post the 2003 SARS outbreak, if a person has an upper respiratory tract infection, they wear a mask. If you have the sniffles, you wear a mask and go to work. It is a different way of thinking.

There has been a big scientific debate about mask wearing. The World Health Organization supports the use of face coverings. The US is now talking about doubling up on face coverings, but its virus rates are currently very high, so there is a sense in which it is also about messaging. We all saw the politics around President Trump and masks. There is the science, and then there is the politics of masks, which is very much culturally determined. As soon as the coronavirus epidemic started in China, there were queues at all the shops in Hong Kong that sold masks, and they ran out very quickly, because the population sees masks as being protective. The science supports that—Ben Cowling, at the University of Hong Kong, has looked intensely at that.

Masks are not foolproof; wearing a mask does not mean that one is not passing on the virus or will not catch it, but it can reduce the chances of transmission between two people who are wearing them. Mask wearing has been quite a contentious issue. For some reason, we have not been promoting it in UK culture in the way that other countries have. The future of masks might be something that the population decides on, as opposed to their use being mandated. We do not mandate masks as other places have, as part of their social distancing and personal protection approach.

There are interesting questions. When are masks mandated? When do you have to wear them? Who will continue to think that masks are useful, and who feels more protected when they wear one? There is some evidence to show that it is true that people do.

On social distancing measures, it is very difficult to know what will happen. The road map that was given in England said that we would be back to normal on 21 June, but there will be a review at that point. The problem is that we are all looking at dates as opposed to data. Some of us would prefer to see the data.

A review group will look at all the evidence and make recommendations. I have heard other very senior scientists say that they think that we will perhaps still be wearing masks next winter in situations in which people are in close contact, such as in shops. It is difficult to give an absolute answer to the question, but I stress that there is quite a large cultural element involved; it is not all pure science. It will be about what seems to fit as we move forward. If we can keep vaccination rates high and transmission low, we will avoid more lockdowns. Essentially, the question is about what it takes to do that. Will masks and social distancing play into the approach?

I agree that there is need for a very good test and trace system and for support for people who are in self-isolation. That will be fundamental. To go back to inequalities, I note that we know that many people, in particular those on zero-hours contracts, do not want to come forward because they do not want to lose their income. We have to make suppression of the virus possible and practical for the whole of our population.

I must apologise, convener—I have to go to a meeting in Wales now, so I will have to leave you all. I am sorry about that. Thank you for listening to me today.

Annabelle Ewing: Thank you very much indeed. I appreciate that my time seems to be up, convener, but if Professor Woolhouse wants to return to masks in a later discussion with one of my colleagues, I am sure that he will be welcome to do so.

The Convener: I am sure that Professor Woolhouse will be able to answer your question when he addresses other questions. I take the opportunity to thank Professor Griffiths for her attendance.

Our next questions are from John Mason.

John Mason (Glasgow Shettleston) (SNP): This question might be for Professor Baker, but I will be guided by whoever wants to answer it. The question of costs and benefits has been mentioned; for example, we discussed the need to balance tourism with keeping the virus out. We have been told about the idea of quality-adjusted life years and putting a cost on such things. I am an accountant, so I quite like the approach, but I also feel that it is a bit hard-hearted, in some ways.

I understand that, normally, we would give somebody a drug if the cost, based on their QALY score, was between £20,000 and £30,000. It has been suggested that the cost for saving a life from Covid is much higher, at £200,000 or more. Should we look at things that way? Is it a useful approach?

Professor Baker: That is a great question. When I talk to health economists about the matter, they generally say that we will know only with hindsight how the economics stack up. However, we cannot look at pandemic control using standard health-intervention measurements such as you describe—for example, if we were to say that an intervention had to stack up with the cost per QALY, or whatever measure we were using. In conventional economic terms, we are talking about very expensive years of life being saved as a result of the Covid response. Some people might say that the better metaphor is that Chamberlain, when deciding whether to declare war after Germany invaded Poland, would not have looked at the QALYs or disability-adjusted life years that would be saved. Similarly, there is a different metric when we are battling something like Covid. It is not a major existential threat, but it is a threat that we cannot fully quantify.

In addition, with regard to negative effects, we need to look at alternative scenarios. It is often better to ask what scenario we would choose, and what scenario a population would choose. In New Zealand, even though the Covid response is the most expensive public health intervention in our history, there is a massive mandate for it; our Government was returned with the highest majority since we introduced proportional representation. Based on willingness to pay, I think that such intervention is, according to that metric, highly supported.

Nevertheless, that was a very good question. I suspect that we will see the answer only with hindsight.

John Mason: Perhaps Professor Woolhouse wants to comment on that point.

Professor Woolhouse: I agree with what John Mason said in the question. Your assessments are right, and there is a real prospect that the Covid response will turn out to be one of the most costly public health interventions in history, in terms of price per life saved, or however you want to keep score.

However, I agree with Professor Baker that this is not a situation in which we should apply standard health economics metrics. The figure of £20,000 to £30,000 per healthy life year that you gave comes from the National Institute for Health and Care Excellence, which is charged with working out how much we should be spending on individual patients in the national health service.

That is important, but there is an even more important question underlying what you said. Is it possible for the cure to be worse than the disease? Yes, it is. We will have to make a reckoning of that after the event is over. In fact, that has already started. As far back as April last year the ONS did a study for the scientific advisory group for emergencies down in London, and its assessment was that the indirect harms of the first lockdown, in terms of morbidity and mortality—it used the QALY measure that was mentioned—were, in its central estimate, three times higher than the benefit. It estimated that the harm that was done by lockdown was so huge that it outweighed the public health benefit.

There is a lot of uncertainty about that, and the ONS has done a second analysis more recently—which, I have to say, is even more equivocal about where the balance truly lies. Nevertheless, it is clear that there is genuine concern that the cure has, in fact, been worse than the disease. We might find out that that is the case.

John Mason: I guess that we will know some of that only in hindsight.

I want to touch on how prepared different countries were for a pandemic. There had been expectations of a pandemic and it was suggested that the UK and the US were the best-prepared countries, yet they have had huge levels of deaths and infections. On the other hand, I do not know how well prepared New Zealand was, but it has certainly been very successful. Is it possible for us to be better prepared for pandemics in the future?

Professor Woolhouse: As you know, the UK, including Scotland, was prepared for pandemic influenza in particular. That was not the only focus of our preparedness planning—I have discussed other potential threats with chief medical officers in the past—but nonetheless the detailed preparations were for pandemic influenza.

In south-east Asia, the situation was different. I would love to know what the situation was in New Zealand. South-east Asia was much more affected by the SARS epidemic in 2003, so preparations there were around SARS. Most global public health specialists and epidemiologists would say that there is a clear dichotomy: those countries that were prepared for SARS on the back of what happened in 2003 did better than countries such as the UK, including Scotland, and the US, which had prepared for pandemic influenza.

As we have heard, New Zealand has been very successful, but arguably Taiwan has been the most successful country of all during the pandemic. Taiwan started its SARS-motivated response on 31 December 2019, when it first heard what was happening in China. That was before most people in the UK had even heard of the virus or the disease. I have concluded from that comparison that, although it would have helped if the UK or Scotland had been better prepared, we needed to be better prepared for the right thing.

There are actions that were not taken back in January 2020 because we were implementing the best preparedness plans that we had, which were based around influenza. We should have been preparing more widely and years before that for things that are not influenza, including the virus that we are actually faced with. As I like to put it, we did our homework but, when we were given the exam, it was the wrong test.

John Mason: That is a good comparison. Does Professor Baker want to come in?

Professor Baker: I agree with Professor Woolhouse on that. In fact, New Zealand was poorly prepared. The main thing that we did right was that we looked at the experience of China and Taiwan in particular and thought, “This virus can be contained.” It was contained very effectively in Wuhan—the “Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)”, which came out at the end of February, said that that was the case. The WHO went in with a credible group of scientists and they said that the virus really had been contained.

It is a remarkable and unprecedented achievement that a respiratory virus pandemic could be stopped when it was already very intense. People like me said, “It’s more like a SARS virus and less like influenza. We won’t tear up our influenza plan, but we’ll apply it in reverse order. We’ll throw everything at the virus at the beginning, rather than taking the mitigation approach and gradually increasing the intensity of

the response as the pandemic worsens." When we had fewer than 100 cases in New Zealand and no deaths, we went into our most intense lockdown to eliminate the virus. We were following the Chinese model.

10:15

I must admit that I assumed that the entire western world would do the same. Admittedly, New Zealand had a slight timing advantage, but it was not profound. Unfortunately, the WHO was telling us to do almost the opposite: it was saying, "Keep your borders open, save lockdowns as a last resort and don't divert masks for widespread use—save them for the health workers." In the end, we simply did the opposite of what the WHO was recommending, and that is what helped.

By all metrics of preparedness, New Zealand was quite a long way down the list in terms of resources. At the top of the list were the US and the UK. I am still greatly surprised that the western world ignored the experience of China and that the WHO, which was tracking events in China—it was partly a WHO team that went in there—did not seem to follow its own evidence. The failures of risk assessment will be picked over for many years in order to understand why most western countries got it so wrong at that point.

Maurice Corry (West Scotland) (Con): My first question is for Professor Woolhouse. You have given us an upbeat view of progress, in that we are ahead of the Scottish Government's original plan for relaxing lockdown. However, we still have pockets in which there is an increase in cases, such as the Lothians, Dunbartonshire and Stirling. Is the view that you have taken sensible, bearing in mind the current situation in those areas?

Professor Woolhouse: The epidemic has always been heterogeneous in Scotland. That has always been an argument for targeting measures at specific regions such as local authority areas, health board areas or whatever, and the Scottish Government has consistently done that, which I think is quite appropriate.

I think that we would all agree that, if measures can be taken locally rather than nationally, we all benefit, so I have no difficulty with the Scottish Government taking great notice of any local variations in the state of the epidemic.

Maurice Corry: Yes, but your upbeat view—which is good to hear, of course—rather concerns me in relation to the local issues in those areas, which we heard about earlier this morning.

Professor Woolhouse: I am agreeing with what I understand the First Minister to have said: that there may be different rates of relaxation in different areas. I agree with that.

Maurice Corry: Okay—thank you for that.

I turn to Professor Baker. What key points have you learned in New Zealand as a result of the epidemic? Which measures should we implement in Scotland, and possibly across the UK?

Professor Baker: My main conclusion is that you need informed scientific input and decision makers who listen to scientists and act decisively. It is frustrating to have one without the other—to not have the science correct or not have the political leadership. You also need some other elements, such as enough infrastructure to implement measures; engagement and trust from the public; and some kind of safety net to protect the most vulnerable. Those five elements seem to be critical.

There are now about 15 jurisdictions around the globe that are pursuing elimination. It is the dominant model across the Asia-Pacific region, and it has been highly effective. As Professor Woolhouse mentioned, many of those Asian countries had experience of SARS. We have done a lot of work with Taiwan and we published a paper in one of the *Lancet* journals in which we outlined what New Zealand did and said that Taiwan actually did it even better.

Taiwan had a dedicated agency that looked at what was happening and acted swiftly early on. It entirely avoided the need for a lockdown, and it did so partly by managing its borders very carefully. In addition, it had an established culture of mask use and established contact tracing systems in place. All those elements came together to form the best response—I think—in the world, based on outcomes, with the least amount of disruption. For future preparedness for respiratory pandemics, we could learn a lot from what Taiwan did.

Maurice Corry: Thank you for that. I come to my final question. With regard to leadership, is it the health experts, rather than the politicians, who lead at times like this?

Professor Baker: We need a collaboration involving both. I have been one of the science advisers in New Zealand and I think that, ultimately, our task is easier. There is the fear of being wrong, which is quite difficult and stressful for scientists, but in the end it is the elected politicians—the representatives—who have to make the really tough calls, based on the science advice and the economic and other consequences. They have the hardest job, and they will suffer electorally if they get the balance wrong.

In New Zealand, our leaders got it right and, as a result, they had a very positive endorsement from the public in our November election. We need mechanisms that allow the scientists and the

politicians to have a frank and positive relationship in order to undertake risk assessment and identify risk management options.

Stuart McMillan (Greenock and Inverclyde) (SNP): I have a question for both of the remaining witnesses. Later this year, the Euro 2021 football championships will take place. As we have heard from both the Prime Minister, earlier this week, and the First Minister, the indications are that the vaccine programme for adults will not be completed until some point in July—that is certainly the target date. However, the Euro championships will start in June—the first game in England will take place on 13 June, with some other games in London and Scotland thereafter.

Bearing it in mind that every country has its own vaccination programme and that programmes will be delivered at different rates, what do you think about opening up football stadia when the whole adult population has not yet been vaccinated? Will it be safe to allow football fans into stadia and people to travel from one country to another?

Professor Woolhouse: It is a question of doing the work and undertaking a formal risk assessment to look at the risks that are involved in partially opening stadiums, opening them only to fans in Scotland or whatever the various options might be.

We know that the virus transmits best in particular environments, such as when adults are gathered together indoors for prolonged periods in poorly ventilated conditions, especially when they are talking. That is a description of what we do in our houses, which are the best place for the virus to transmit. Mass gatherings are clearly a problem because people may be packed closely together and because there are pinch points such as travel, toilet and refreshment facilities and so on, where conditions may be better for enabling the virus to transmit.

Decisions would have to be made on the basis of a proper risk assessment. To be frank, I do not think that any of us can say just yet with complete confidence what the epidemiological situation will be in June. That brings me back to my original comment in response to a previous question. The data look very good, and we should maybe think about bringing things forward, but that is part of the risk assessment. If things are continuing to go better than we had expected, one would hope that the risk assessment would be more positive. A glib answer of yes or no from me would not be appropriate—you would have to do the work.

Professor Baker: I am not sure that I can add much to that. It is a problem for risk assessment, and you are all much closer than I am to the situation that will apply. I guess that a lot will come down to how effective the vaccines are at interrupting transmission. We always think that the combination of people travelling internationally and large gatherings are two huge red flags for transmission of the virus, so it is quite a tough question.

I do not know enough about the exact timing of what you are going to be doing, but I think that everyone will want to be very cautious throughout the coming year. I have heard that view expressed a lot, certainly in this part of the world. Again, however, the UK is ahead of New Zealand on vaccination, so perhaps things will be such that you can be more optimistic part way through the year.

Stuart McMillan: My second question is on a different subject. We have already discussed today areas of deprivation. The area that I represent is considered to be deprived, and we also have an ageing demographic. To give you an indication of that, the National Records of Scotland says that, between 1998 and 2019, the 75-plus age category increased by 24 per cent, the 65 to 74 age group increased by 13.8 per cent and the 45 to 64 age group also increased by 13.8 per cent. In contrast, the younger population is very much decreasing. A specific example is the 25 to 44 age group, which has decreased by 29.1 per cent.

Given the deprivation challenges that we face, along with our ageing demographic, is a perfect storm of challenges facing particular communities, mine included, as a result of the effects of Covid and how it is dealt with?

Professor Baker: There is overwhelming evidence that there is a huge gradient based on age, deprivation, ethnicity and co-morbidities—there are multiple factors that are now quite well established. Considerations around equity are huge in driving interventions and concern for particular populations. There are many global examples of countries that have not paid enough attention to equity, and that has derailed their programmes. Singapore is one of the best-documented examples.

In all aspects of the response, equity needs to be put right at the centre. One of the reasons why New Zealand was so enthusiastic about the elimination approach was that we knew that keeping the virus out would be the most pro-equity policy that we could have. There was huge concern to keep the virus out of the Pacific islands, to which people travel from New Zealand, in order to protect those countries. That has been a big driver here. We have not seen any social gradient in New Zealand because we have not had many cases, but ours is obviously not a typical situation.

Professor Woolhouse: Equity is tremendously important. As the committee knows well, health inequities have been an issue in Scotland for generations. One of the inequities that has come to light concerns access to health care, and a spotlight has been shone on that through the issue of access to and uptake of the vaccination programmes. I put it in this way: if there was ever a motivation to try to iron out those long-standing inequities, uptake of vaccines would surely be it.

There is a double effect. We want to protect the people who, as Stuart McMillan rightly said, have an increased vulnerability to the virus, so that has to be an imperative. We also want to protect the entire population, which we cannot do if there are pockets of the population where the virus is circulating freely because vaccine uptake has been low. That is a tremendous motivation for trying to sort out those long-standing inequities.

Stuart McMillan: My final question is brief. We have heard the phrase "data not dates" being used over the past few weeks. Which data should be driving the strategic response? Should it be prevalence, incidence, the R number, the positivity rate or vaccine coverage? I put that question to Professor Woolhouse first.

10:30

Professor Woolhouse: The vaccination programme has the very strong effect of decoupling the burden on the NHS from the incidence and from the R number. For example, in the next few weeks, it will be possible—I am not saying that this will happen—for the R number to be above 1 and for the number of hospitalisations still to be going down, because the vaccine roll-out is more than compensating for any increase in the number of cases. Those metrics—the incidence and the R number—will become less important.

We would want to pay attention in particular to hospitalisation rates and to the age distribution in those rates, and also to not only the number of vaccinations that have been given—the rate of roll-out—but the figure for coverage, which came up at the beginning of the session. We want the coverage to be as high as possible. That relates to my answer to your previous question. We want even the people who do not normally get good access to health services or do not take up vaccines to take up this one, because the higher the coverage, the more we are all protected.

The numbers that we want to watch have changed. The WHO's test positivity rate has not been a good indicator of the state of the epidemic in Scotland all along. I have yet to discover from the WHO where it came up with the 5 per cent figure, but it does not seem to have much bearing on what is going on in Scotland, and it has not been a good indicator for us. Hospitalisation rates and vaccine roll-outs are my priorities.

Professor Baker: I very much defer to Professor Woolhouse on that question, because we do not have experience in New Zealand of dealing with the issue of which indicators to use. We would obviously have used all the indicators that have been described if we had transmission within New Zealand.

Stuart McMillan: Thank you very much, gentlemen.

Willie Coffey (Kilmarnock and Irvine Valley) (SNP): I have only one question, but it is for both Professor Woolhouse and Professor Baker. I want to give you a wee opportunity to sum up by saying what we should do next and what would give us the greatest return.

Professor Woolhouse, I found some of your comments quite worrying. You said that Scotland could never get to where New Zealand is now, that 75 per cent of people were infected after the lockdown measures were introduced, that we are on a knife edge in terms of suppressing the new variant and that we are finding only half of the people whom we need to self-isolate.

As a constituency member for Kilmarnock and Irvine Valley, I see constituents going in and out of supermarkets and retail parks day in, day out. There is no track and trace going on in those places, as far as I can see. Do we need to wise up with regard to the technology that we use to do that? Is that perhaps one of the areas where we can make the greatest impact as we move forward in trying to suppress the virus?

Professor Woolhouse: There has been a lot of talk about the uptake of the apps that allow us to track and trace, which has been quite low. As a consequence, the contribution of the apps to reducing transmission has been even lower. If only half of the people take up the app, it will be only a quarter as effective—we require both parties to have the app in order for it to work. In south-east Asia, there has been much more enthusiastic and regulated use of apps to try to monitor the virus. That requires uptake, and mechanisms to encourage and enforce uptake. The uptake must be very high if the apps are to make a substantial difference.

To broaden my answer, I note that all the problems that I have reported, which you described, are about trying to suppress the virus. Once the virus is established, that only gets us so far, as we have seen in Scotland and the UK, and in the whole of western Europe.

I have one small issue with a comment that Professor Baker made a few questions ago. He said that there were marginal differences in the

timing of New Zealand's response to the epidemic. No—those were decisive differences. New Zealand was able to take its actions when it did, with the effect that those actions had, because the virus was not already established there. I come back to the point that, in the UK and in Scotland, we would have had to take those actions probably in mid-February, and that was not being discussed at the time. Once the virus is established, suppression does not solve all the problems that you, I and everyone else want to solve. We have to do more.

Willie Coffey: Professor Baker, will you offer a few words? Where is the greatest opportunity for us to make the greatest impact on reducing or suppressing the virus?

Professor Baker: I should be very humble in giving advice to Scotland, because I do not know all the conditions that apply there. Again, I am very interested in Professor Woolhouse's comments as he is there, on the spot, having to look at the situation.

I am interested in the idea of path dependency. Countries chose their major approaches early on and decided to head down particular valleys. Once you are heading down a valley, it may be quite hard to cross over to a different one.

I have not done enough comparative modelling of the scenarios in different countries. What convinced me early on with regard to our elimination strategy was simply that Wuhan, which had the earliest and most intense epidemic anywhere, was able to contain and eliminate it. That provided me with a lot of reassurance that, given that conditions in New Zealand were more favourable than in Wuhan, we should be able to manage elimination. We were not certain that we could do that, and in a sense it is still an open question.

I think that a country can change its trajectory from a suppression approach to elimination even many months after the virus has been introduced. When I talk to modellers, they say that there is no specific barrier to doing that. Essentially, with lockdown, the use of masks and so on, you are basically putting the population into home quarantine for several weeks. Most modelling that I have seen done shows that you can eliminate the virus from almost any starting point; it is just a question of whether other preconditions exist, or whether conditions make it very difficult.

I cannot really comment on how that would apply in the Scottish context, but availability of effective vaccines should certainly make elimination easier. Around the globe, we have elimination strategies for viruses that are far more infectious, such as measles. That is why, personally, I still believe that it is worth considering elimination, before it is rejected by your organisations in Scotland.

Willie Coffey: Thank you for those answers. In the interest of time, I will hand back to the convener.

The Convener: I am grateful to you, Mr Coffey, for shortening your questions slightly and drawing the session to a close. I thank Professor Baker and Professor Woolhouse for speaking to us this morning and taking our questions. It has been an incredibly helpful session.

That concludes our consideration of agenda item 1. I will suspend the meeting to allow a changeover of witnesses.

10:38

Meeting suspended.

10:45

On resuming—

Ministerial Statement

The Convener: Under agenda item 2, the committee will take evidence from the Cabinet Secretary for the Constitution, Europe and External Affairs, Michael Russell MSP; Professor Jason Leitch, national clinical director; and Dominic Munro, director for Covid-19 exit strategy, Scottish Government. This session gives members the opportunity to take evidence on this week's statement by the First Minister on Covid-19.

As ever, you are welcome cabinet secretary; I invite you to make a brief opening statement.

The Cabinet Secretary for the Constitution, Europe and External Affairs (Michael Russell): Thank you, convener. I do not have legislation or regulations to propose this week, but I will make a brief statement about the First Minister's statement and the progress that we are making on the pandemic.

As members will know, on Tuesday, the First Minister set out the details of the updated strategic framework for tackling Covid, which the Scottish Government has published. She provided an indicative timeframe for cautiously easing restrictions and restoring greater normality to our lives—we would all greatly welcome that—as quickly as we can and in a safe and sustainable manner, ensuring that we are driven by data and not merely by dates.

We have made one significant relaxation of lockdown this week. From Monday, children returned to early learning and childcare settings, and pupils in primaries 1 to 3 returned to school. That is very welcome. Some secondary school students are also now going back to school for essential practical work. It is important to see what impact that has on transmission before we commit to further relaxation.

The current position is positive and promising, but it is still quite precarious. If we are to sustain our progress, we need to exercise care and caution. Maximum suppression is important for our chances of getting back to normal. We intend to publish a further document in mid-March that gives more detail on the sequencing of reopening the economy from late April onwards. However, we have set out the overall approach to easing restrictions over the next few weeks.

Let me turn to the priorities and the indicative timeframe. I confirm that, if all goes according to plan, we will move fully back to a levels system from the last week in April. We hope that, at that stage, all parts of the country that are currently in level 4 will be able to move out of it and back initially to level 3 and that those in level 3 may move to level 2—possibly with some revision to the content of the levels—and afterwards to levels dependent on the incidence and prevalence of the virus at that time. Moving back to the variable levels system at that time will also be contingent on our having offered vaccination to all Joint Committee on Vaccination and Immunisation priority groups 1 to 9. We hope to have done that by mid-April, supplies permitting.

From the last week in April, we expect to see phased but significant reopening of the economy, including the reopening of non-essential retail, hospitality and services such as gyms and hairdressers. We envisage a progressive easing of the current level 4 restrictions, which apply across most of Scotland, at intervals of at least three weeks along with changes nationally on education and care home visiting, with the immediate priority being the continued return of schools and, of course, the easing of restrictions on care home visiting from early March.

As I have said, the next phase of easing will be a minimum of three weeks later—so, indicatively, from 15 March. We hope that that will include the next phase of school return, which will start with the rest of the primary school years—years 4 to 7—and getting more senior phase secondary pupils back in the classroom for at least part of their learning. We also hope to restart outdoor non-contact group sports for 12 to 17-year-olds. We will aim to increase the limit on outdoor mixing between households to four people from a maximum of two households, compared with two from two at the moment.

I hope that the stay-at-home restriction will be lifted at a minimum of three weeks after that—from 5 April. We would aim for any final phase of school return to take place on or after that date. I hope that communal worship will start at the Easter weekend—that is, the weekend of 4 April—albeit with restricted numbers to begin with, but taking into account the timing of major religious festivals. We will seek to ease the restrictions on outdoor gatherings so that at least six people from two households can meet together. That phase will begin the reopening of retail. That will start with an extension of the definition of "essential retail" and the removal of restrictions on click and collect.

Three weeks after that—from 26 April—assuming that the data allows it, we will move back to levels with, I hope, all of Scotland moving to level 3, albeit with some possible modifications. At that stage, we will begin to reopen the economy and society in the more substantial way that we are all longing for and looking for.

In mid-March, we hope to set out more details of the further reopening that will take place over April

and into May and into a summer in which we hope to be living with much greater freedoms than we have been able to today.

I hope that that has been useful. I am, of course, available to take any questions, as are those who are with me. Jason Leitch has been here with me many times before, and Dominic Munro has special knowledge of the frameworks. I am sure that that can be helpful.

The Convener: Thank you very much, cabinet secretary. As ever, that was very useful.

We turn to questions. I remind members that we have approximately eight minutes each for questions, so it would be helpful if we could keep questions and answers concise. If there is time for supplementaries, I will indicate that once all members have had a chance to ask questions. We have to finish before First Minister's question time, which will take place later this morning.

I will ask the first question, which is about the sense that the decline in cases is slowing or that there is at least a stalling in their improvement. Specific locations, such as the Lothians, have been mentioned in that context. I suspect that this question would be best directed to Jason Leitch. Why is that happening now? Why did it not happen three weeks ago, for instance, when we were in more of a lockdown?

Professor Jason Leitch (Scottish Government): Good morning, everybody. It is nice to be back.

There are multiple reasons for that, none of which is definitive, because we will not know the answer until we get beyond this moment. However, you are right: it appears that all four UK countries have stalled or slowed the decline in the number of cases. In rough terms—it is not an absolutely accurate figure—everybody has got to about 100 cases per 100,000 of the population, and it has kind of stopped there.

It is easier to reduce big numbers to small numbers. The last bit is always slightly more difficult, because the cases are harder to find. We are also on the edge of what we can manage with test and protect, because we are not dealing with big outbreaks any more; it is perhaps more about stubborn community transmission.

From research, we know that non-pharmaceutical interventions—the description for the things that we are all doing as individuals—still work for the new variant, but they do not work as quickly. The curve for what we might call the old virus has fallen at the same rate at which it fell in April and May 2020. That for the new virus, which is now the most dominant in the whole of the UK, is falling much more slowly, but it is still falling. However, in the past week, we have gone from 104 new daily infections to 104, which has given us cause for reflection. We still think that it is safe to open schools and early learning, but one of the reasons why we are suggesting that the Government should not do much more than that is so that we can monitor the three weeks, which represent roughly one and a half incubation periods, to see what happens to the prevalence of the virus across that period.

The other thing that will catch up is vaccination. As I have said to the committee many times, vaccination is not an end in itself; it is about reducing the prevalence of the virus. We are therefore concerned not so much with vaccine coverage as we are with what that does to the prevalence of the virus. As we get to vaccinating the lower age groups, as we are doing now, and they engage with society—unlike care home residents, who are mainly isolated from it—that will begin to affect prevalence. We are therefore very hopeful that prevalence will continue to fall.

The Convener: Thank you for that. My final question is about the new framework and the return to the levels system, which the cabinet secretary mentioned earlier. In one of the summary diagrams in the new framework, there is mention of "revised metrics". Could the cabinet secretary, Professor Leitch or, indeed, Mr Munro, elaborate on what those might be?

Michael Russell: Dominic Munro and Jason Leitch are in a position to answer that question.

Dominic Munro (Scottish Government): Can you hear me okay?

The Convener: Yes, we can hear you.

Dominic Munro: Thank you.

I do not know whether colleagues have the strategic framework in front of them, but we have set out, in table 1 on page 60, indicators that have been advised by the World Health Organization in interim guidance. The table shows weekly case numbers per 100,000 people and test positivity, and the existing metrics that we use in those areas are contrasted with those that have been advised by the World Health Organization. Those are two of the key sets of metrics that we will use.

More generally, we will use the World Health Organization's six key conditions for easing restrictions, which are also set out in the document. In the middle of March, we intend to publish further information on indicators in the publication that Mr Russell outlined in order to provide complete clarity.

Professor Leitch: There are two answers to the question about what will be different. Exactly as Dominic Munro said, the first relates to the nature of the data. However, the categories will look quite similar to the previous ones.

The other thing that will change is where we go with the ranges in which we make choices. As the global pandemic enlarges and decreases around the world, the WHO gets more knowledge and gives us better advice. We know what a positivity rate or a prevalence number means more deeply, so we can make better choices and give better advice.

The new variant means that the ranges will probably be tighter or lower, because no country has done what we are about to do, which is to relax during the new variant. Therefore, as you will note from the table that Dominic Munro mentioned, we have moved the range downwards. That means that, on yesterday's data, only seven local authorities have fewer than 50 cases per 100,000 and only two local authorities—Orkney Islands Council and Shetland Islands Council—have fewer than 20 cases per 100,000. That is just one of the data points. We have to look at that data in the round, of course. We are being slower, through the three-week reviews, in order to get us to the point when we can start to use the data to take a more regional approach.

The Convener: Thank you for those answers and for pointing me to the page in the document that has been referred to. That is incredibly helpful.

David Stewart: Good morning. I have two quick questions. The first is on health inequalities, so it might be most appropriate for Jason Leitch to answer it.

I have looked at two studies. The first, which was published just this week by Professor McVie from the University of Edinburgh, shows that people in deprived areas are 11 times more likely to be penalised for Covid breaches than those in wealthy areas. The second study, with which you will be familiar, was in *The Lancet*. It looked at all 90,000 patients in England who had a hospital stay between March and May 2020. I think that there was a 30 per cent death rate but, as you would expect, there were strong links to deprivation and comorbidities such as diabetes and chronic obstructive pulmonary disease, which are themselves connected to deprivation.

Can any general connections be made? My rather simplistic political line is that, to battle Covid, we need to battle poverty, but that is perhaps for another discussion at another time. What is your view, Professor Leitch?

Professor Leitch: I completely agree with you, Mr Stewart—whether that is political or not. I think that it is apolitical to suggest that, to tackle infectious disease, we have to tackle inequality. It is probably public health 101 that pretty much everything about someone's health is related in some way to their social demographic. That is, of course, not the case universally. Some very wealthy and privileged people die of Covid, as do some poor people. However, in the round, public health is often about inequality.

11:00

I will leave the question about criminal justice and the first study that you mentioned for Mr Russell. The second study that you mentioned reaffirmed what we already know about infectious disease. If a person is poor, they get worse outcomes. Poor people catch the infection more and they die of the infection more, pretty much across the infection spectrum.

A long lecture would be required to explain why that happens. We should bring back Sir Harry Burns to give us that lecture if we want to hear about the subject in real depth. However, it is fundamentally about pre-existing conditions, such as obesity, diabetes and respiratory disease, which are more likely in the poorer groups—forgive the shorthand. Those are all more common in lower socio-demographic groups. Again, that is not universal. We should not put everybody into bands and say, "That's you. You're written off." That is not what I mean at all. However, our response should reflect those differences. The GP practices, the community-based vaccination teams, the third sector and social care in those areas have wrapped up their services in order to try to address some of those inequalities. How we deal with structural inequalities to help us to get out of this pandemic and any future pandemic that comes along is a matter for you and other politicians, including Mr Russell.

David Stewart: I would welcome the cabinet secretary's response on my final question, which is on the big picture of where we are going and what our overall strategy is. You may have picked up that our earlier evidence session considered whether suppression, mitigation or elimination is our strategy. Again, I apologise for quoting stats at you, but I will quote three things that I picked up recently. First, the University of Oxford said that the UK has the third strictest lockdown in the world, after Venezuela and Lebanon, which is partly good news. Secondly, we have the second-highest vaccination rate in the world, after Israel, which is good news. Finally, although this is perhaps a lag statistic, the UK had the highest death rate per million in the world. I appreciate that there are probably some time differences between those three snapshots.

What is our overall strategy and can Jason Leitch say something about the three snapshots that I have given? Where are we going and what is the strategy? Without meaning to be frivolous, I note that, as you will recall, a German military leader once said that every strategy is destroyed

on first contact with the enemy. I am not suggesting that we are facing an enemy, but it is easy to have a desktop strategy that does not meet the reality of day-to-day life.

Professor Leitch: Some of that is for Mr Russell. The strategic framework says that the strategy is to reduce prevalence to as low a level as possible and hold it there sustainably. There is a long discussion about the four harms in the framework document, which the committee understands better than many other people because we have talked about them so often—health and social care effects; societal effects such as loneliness; care home restrictions; and economic effects.

Part of the academic conversation is dancing on the head of a pin—is it mitigation, suppression or elimination? The fact is that everything will get better if we reduce the prevalence to a very low level. Normality will return if we are sure that hospitals will not be overwhelmed, fewer people will die and fewer people will be hospitalised, and all of that stems from case rates. Vaccination will help us, because if you get the virus and have been vaccinated, you are less likely to get hospitalised, so hospitalisation becomes slightly more prominent in our decision making when vaccination starts to affect what positivity means. Does that make sense? Positivity is still important for now and, as we move through the stages of the pandemic, positivity will still matter, but not as much, because the consequence of being positive will be less grave. That is what vaccination does, which is why the vaccination programme is so good.

I think that the advice to aim for as low a level as possible is right. We can look at global examples of where that is done—depending, of course, on which stage of the pandemic we are in. We cannot be like New Zealand in February 2021, but we can be like New Zealand in February 2020—that is a completely different argument. However, can we drive the prevalence down to as low a level as we can, in order to get domestic normality, with kids going back to school and people back to seeing their families? Yes. I still believe that that is the correct strategy to use.

Your final piece of data about the death rate will be an important thing for us to study. None of those deaths should be taken lightly. I think that the excess mortality across Europe—including our responses to the pandemic and the nature of the virus—will be studied for years to come. I am afraid that we can now see other countries getting the Kent variant and beginning to think about locking down again. In France numbers are rising, as they are in Norway, Denmark and Sweden. People are getting concerned because the new variant is being exported from the UK—not imported—and those numbers are rising.

David Stewart: Thank you, Professor Leitch. I appreciate that answer. Does Dominic Munro or the cabinet secretary wish to comment in response to my questions?

Dominic Munro: I am happy to come in if Mr Russell is happy for me to do so.

Michael Russell: Can I perhaps say something? I tried to come in before, but I do not think that whoever is controlling the microphones is watching particularly closely. I wanted to make a point about inequalities, and Mr Stewart has already raised that important issue.

I do not think that anybody would disagree with the general thesis that health inequalities are serious and need to be addressed. I noticed that they came up in the committee's discussion with the previous panel, too. I also noticed discussion on, I think, Monday, in the wider UK context, of the fear that there could be communities, and parts of communities, that simply are not able to be accessed either for vaccinations or for other actions. We need to be very aware of that, as Jason Leitch has indicated, and we need to take action to ensure that that does not happen in Scotland. There will be certain communities in which take-up will be lower and there will be resistance to it. From the figures that we have on prevalence among younger age groups we also know how important that will be—particularly to get to younger men, who, as Mr Stewart will know from a variety of other areas, are resistant to involvement in wider initiatives. That issue is being taken very seriously.

On strategic intent, what Jason Leitch has said is really important. We have a clear strategic intent in our document. It has to apply to everybody, so that also deals with inequalities. I think that our document refers to those perhaps half a dozen times—which is not the case in the UK Government's strategy—so we are very aware of the issue.

Finally, I draw the committee's attention to a piece in this morning's *Financial Times*, which talks about the differences of approach—which are not enormous—and the dividends that have come from those, which are important.

I am sorry; Dominic Munro wanted to come in, too.

Dominic Munro: Thank you, cabinet secretary. I want to reinforce what both Mr Russell and Professor Leitch have just said. If you want to see the specific wording on the strategic intent in the framework, it is set out on page 7 and is repeated elsewhere in the document. That is a key point: it is consistent throughout the document, as it has

been over time. It is the same strategic intent that we published back in October, and it has served us well. If the committee would like to see an elaboration of it, in her foreword, the First Minister talks about the principle of maximum suppression and why it is right to aim for that, which again is consistent with the remarks that Professor Leitch and Mr Russell have just made.

On one other dimension of your question, Mr Stewart, you made a point about strategies not surviving the first engagement. That is key, because the return to the levels approach that Mr Russell outlined will give us flexibility, within the strategic framework, to respond to the conditions that we find towards the end of April or whenever it may be. It is not a rigid plan, which will be advantageous to us as we move forward in pursuit of our strategic aim.

Willie Coffey: In our earlier evidence session, Professor Woolhouse told us that we are finding only half of the people who need to self-isolate. He talked about how robust the track and trace mechanism needs to be. You will know that, a number of times in the past, I have raised the issue of supermarkets and retail centres, which, as far as I can see, do not operate any form of track and trace system. If that is still the case, are we worried about that? If so, what can we reasonably do to improve the track and trace approach in such settings?

Michael Russell: That is a point for Jason Leitch, but I can say that we are constantly looking at, improving and working on the whole issue of testing and tracing contacts. Our system is a good one, which is working well, but that does not mean that it cannot improve.

Professor Leitch: Let us call what we are doing "case finding" in the round. That is absolutely crucial, and will be particularly so as we open up. That is why you see us expanding asymptomatic testing to some workplaces, such as food processing plants, and to schools. My wife did her first lateral flow test this week, as she goes back to teaching kids. We also now have senior pupils involved in the case-finding process as much as we possibly can, so that we can find as many cases as we can and then trace their contacts.

We have previously discussed transient moments, such as where we walk past people in the park or are briefly in a shop for essential purposes. The science suggests that the tracing bit of the test and protect strategy is not quite as important for such transient moments as it would be, for example, for people who are in restaurants or bars, once we start to reopen them, or in schools, where people sign in and sign out.

However, we will consider anything that makes case finding better, particularly as we come out of the curve, because we have to find as many positives as we can in order to allow people to get back to normal.

Willie Coffey: Thank you. I ask my second question on behalf of sufferers of myalgic encephalomyelitis in Scotland. I raised a question about that on Tuesday and have since been contacted by a number of people who seek clarification on the issue. Could you clarify whether sufferers of ME are in the shielding group and whether they are also in group 6 for vaccination purposes?

Michael Russell: I think that that question is for Jason Leitch.

Professor Leitch: The basic answer is no, but there is some complexity in there. As you will remember, group 4 consists of clinically extremely vulnerable people who were formerly shielding. Group 6 consists of those who are clinically vulnerable. Roughly speaking—it is not exactly the same, but it is a summary of the position—it also includes those who would be in the flu vaccination group, unpaid carers and a number of others. Those groups are based on the risk of death from Covid. I am sorry to be so blunt about that.

The data that the world has presently, and that the Joint Committee on Vaccination and Immunisation uses, says that, in the round, having ME does not increase a person's risk of death from Covid, therefore they are not included in group 4 or group 6 as a big group. However, ME involves a range of conditions. Clinical teams, including general practitioners and those involved in secondary care, such as hospital clinical teams, have the capacity to place individual people in group 4 or group 6, based on their clinical judgment. Some people with ME will have respiratory symptoms that put them at risk. With their clinical team's agreement, they would be able to go in one of those two groups. Some people with ME will have been in the shielding group. However, it is a bit like the position for people with diabetes: having that condition does not necessarily put them in the shielding group, but at the edge of that group of people some were shielding because their clinical teams decided, in consultation with them and their families, that that was the right risk basis to put their case on.

Willie Coffey: How does such a decision come about? Does a person have to consult their GP to say, "I think that I'm suffering additional symptoms" or whatever, or does a GP contact their patient to say, "We think that, from your case history, you might benefit from having the vaccination earlier". Which way round would things work?

Professor Leitch: It could happen in either way. If patients or their organisations are worried

about that, I suggest that a consultation is sought—probably on the phone—with the general practitioner or community-based team looking after that individual. That conversation would be based on the risk of death from Covid. Unfortunately, it is not necessarily about how the patient feels. A lot of people feel unwell with whichever disease they have—whether it be through physical or mental illness or whatever else is going on—but that might not put them at more risk of dying from Covid. The vaccination priorities are based on the risk of death from Covid.

The only postscript that I would add is that we are coming for everybody. The vaccination will be for every adult. We are coming to everybody quickly. People might not get it tomorrow, but we are coming.

Willie Coffey: Okay. It has been helpful to clarify all that. Thanks very much. Back to you, convener. [*Interruption*.]

I think that we must have lost the convener.

11:16

Meeting suspended.

11:20

On resuming—

The Convener: I apologise for the brief break in proceedings. It is Mark Ruskell's turn to ask questions.

Mark Ruskell: I was reflecting on Professor Woolhouse's points from earlier, especially what he said about our finding only fewer than half the cases—[*Inaudible*.]—of those people, as well. That raises questions about a strategy for occupational workplace testing. I want to ask a bit more about that.

The updated framework document from Tuesday talks only about expanding that workplace testing to two specific areas: food production businesses and emergency service control rooms. Will you expand on what that strategy will look like in the weeks and months to come?

Michael Russell: I think that I should ask Jason Leitch to answer that question. It is quite clear that we recognise that issues arise in workplaces. Jason Leitch is in a good position to talk about how we would respond to them.

Professor Leitch: Mr Ruskell has made a good point. We are limited by technology. I do not mean that we are limited by price or volume of testing; rather, we are limited a little by the tech. A full polymerase chain reaction test still takes quite a long time. People have to go and get it, and that technology needs to catch up a little bit. Lateral flow testing is improving, which is why we have given it to teachers, senior pupils and school staff. It is getting better all the time, but it is still not as reliable as we would like it to be.

Yesterday or the day before—I forget which—the First Minister and the Cabinet Secretary for Health and Sport committed to a new testing strategy. We have kept the testing strategy up to date as the pandemic has developed. I think that members will see a greater focus on local authority-based asymptomatic testing—that may be workplace, geographic or deprivation-related, depending on where the prevalence is—and on specific workplace-based testing, which will probably be lateral flow testing.

Yesterday, I did the lateral flow test with my wife, Lynn, for the first time. There are 16 steps, which include having to open a bottle, a thing you have to do, and then you have to put it in the cardboard—the test is not quite there yet for huge use because it is so complicated. That does not mean that we should not use it or that we should not train people in how to use it. We should use it for what we think it is useful for.

There is a lot of very interesting work on saliva testing and faster test results that I think will help us as time passes.

Mark Ruskell: I am trying to get a sense of where we are going with that. You talk about the limitations of PCR and lateral flow testing, and about something else possibly coming along. Is it about restricting the application of those tests at the moment to teachers, emergency service control rooms and food production with the assumption that there will be better tests to come that could be rolled out to all small to medium enterprises, large companies and workplaces in Scotland? It is not really clear where that is going. What should an employer, for example, expect right now as regards the availability of that testing? We do not seem to have a strategy on occupational workplace testing.

Professor Leitch: Mr Russell, should I keep going?

Michael Russell: Please do.

Professor Leitch: The next phase of the testing strategy will have to address that issue in a more meaningful way. We have a plan for that, which has evolved over the past year, and we now have it in many more places than we did initially. We started in care homes then moved into other workplaces, and we are now doing the whole of the education system. That is quite an undertaking for our testing processes. As well as our back-office, supply and procurement systems, there are the digital solutions that are needed for the test results and so on, so that is quite a big deal.

You are right that we will have to move. I do not think that we have to wait for better testing to have that conversation, and our testing advisory groups—the groups that tell us scientifically what we should use the tests for and when—will help us with that decision making.

Mark Ruskell: Okay. Do you know when that will happen?

Professor Leitch: Not with any certainty. I think that we can probably get you that information; Mr Russell's or Ms Freeman's office could write to you to say, "This is the plan for the next version of the testing strategy."

Michael Russell: I am happy to commit to that, but it is important to note that none of this is standing still; every week brings new developments and new debates and discussions about how things should move forward. All our actions and reactions should move us forward, and that will continue to be the case. We are also mindful of the concerns of members when such matters are raised at committee, and we want to think about and respond to those individual issues. I will make sure that we provide a response to Mr Ruskell, and I make it clear that we are changing and developing in just that way.

Mark Ruskell: That is welcome. I will finish by asking a central question that the citizens panel and lots of stakeholders have focused on—what do you consider to be an acceptable level of Covid infection in the population as we go forward?

Michael Russell: I want Jason Leitch to answer that, but I go back to what is in the document about the strategic intent, because you are coming at the issue from one angle and I want to come at it from another. The strategic intent is to

"suppress the virus to the lowest possible level and keep it there, while we strive to return to a more normal life for as many people as possible."

In my view, it is not a question of what is an acceptable level; it is a question of making sure that we are able to return to a more normal life for as many people as possible. That is what people want to do, and our aim must be to find a way to that position. There is a clinical view of the issue, too, on which Jason should respond.

Professor Leitch: I wish that it were as binary as my presenting advice to Mr Russell or the First Minister and saying, "Right, from 1 September there will be 9,000 deaths for the rest of the year or there will be 9,000 deaths caused by our response to Covid. Which would you like?" Of course, it is not like that, and we do not know enough about the disease—for example, we now think that 10 to 20 per cent of people get a chronic disease, but we do not know what happens to that chronic disease in the longer term, because nobody has had it for long enough for us to know.

The comparisons with other diseases are somewhat but not entirely helpful; there has been a debate this week—a slightly geeky debate—about whether we should compare Covid with flu or measles. In a flu season, there are usually around 9,000 deaths across the UK; this disease has killed at least 120,000. The flu comparison does not work, except in the sense that we will have to live with the virus in some way.

Mark Ruskell: It is not flu, though; it is more akin to SARS. It is a SARS virus.

Professor Leitch: That is correct. SARS viruses in south-east Asia can be lived with and you can see their response to this SARS virus and their previous SARS virus in on-going non-pharmaceutical interventions—for example, not going to work if you have symptoms. In our country, people traditionally go to work with symptoms and do not wear a face covering in crowded areas, but in south-east Asia people wear one. Would that continue for some time? I think that it would be part of a strategy to learn to live with the disease.

The only other point that I would make—this should probably form part of a longer session about living with the virus—is that the virus is easier to live with if you have 100 cases than it is if you have 25,000 cases; that is for sure. Therefore, the WHO's six tests for recovery—low prevalence, managing outbreaks, including from the importation of new cases, and so on—make that process much easier. That is the lens that we should use, which is what the strategic framework does. To live with the virus, we need to use those six tests to get us to that point. We can then begin to slowly open, as we did on Monday with the return to school of thousands of children.

11:30

Stuart McMillan: I have been contacted by a constituent who works in a respite facility for young people with additional support needs. They asked a question about getting tested regularly, because they work closely with and care for children. Is there any expectation that testing will be expanded to people who work in that area? Is any planning for that being done?

Michael Russell: There is not only a plan, but work is now under way and is being undertaken on testing in educational establishments. If the facility where your constituent works is an educational establishment, it should be covered by that. If you want to refer the specific case to me, I will be happy to look at it and to get you a response.

Beatrice Wishart: The First Minister provided an update earlier this week but, disappointingly, she failed to include any reference to the plan for islands that are already at level 3. Such an

omission makes it difficult for people to trust that the specific circumstances of island communities are being properly considered and thought through as part of the plan. That is reflected in correspondence that I have received from constituents this week. Will you reassure people in the northern isles that assuring the best-case scenario for island communities features actively in the Government's discussions on levels? Will you commit to making sure that that is addressed in future announcements?

Michael Russell: I represent more islands than any other constituency MSP, so I am in a good position to answer that question. The needs and requirements of the islands are always addressed—I am one of those people who insist that that is the case. To counter what you just said, you might want to make it clear that, on Friday, you and others will meet the relevant minister to discuss the transport issue that you raised at this committee last week. Not only are those requirements being taken care of, but we ensure that conversations with islands members take place at ministerial level so that ministers hear their concerns. Like your postbag, mine is full of specific island issues that people have raised, which are being addressed by their hard-working, assiduous member—I am sure that you are one of those.

Therefore, I do not share the concern. Indeed, I mentioned a move from level 3 to level 2 in my remarks at the start of the meeting.

Beatrice Wishart: I am grateful for last week's intervention, and I am looking forward to tomorrow's meeting with the islands minister.

Last night, a constituent emailed me with concerns about various things, including the fact that his school-age children have not returned to school this week, as they are not among the cohort that has gone back. He says:

"Why is it that we seem to be held prisoners to what is happening in Glasgow and the central belt?"

Can you offer an update on whether schools in level 3 areas might take a different route to those in level 4 areas?

Michael Russell: That is being and will be kept under constant review, and if we can make a difference to that, we will. This is not the first COVID-19 Committee meeting at which I have referred to this, but I will do it again: we are aware that cases of the virus can break out anywhere and everywhere. We use Barra as an example of that. From your experience as MSP for Shetland, you will know that there was an early outbreak there that could not have been predicted and which was severe. We have to balance that with the legitimate view of people in island communities that they should come out of lockdown more quickly, particularly in the area of education. The local education authority is in a good position to have conversations about that with central Government and to influence discussions that are taking place in the education recovery group.

I stress, as I did in my opening remarks, that we must err on the side of caution in the present circumstances. There is a piece on, I think, the BBC website that makes it quite clear that, if we were to apply the WHO criteria, that would show that we are far from out of the woods as yet, so we have to show as much caution as we can. Nobody doubts how difficult this is. People say, "Here's an easier solution," but the reality is that these things are thought about and considered all the time. The local authority needs to engage on such matters with the Scottish Government, as I am sure it does, and members have to engage, too. We will keep such matters under constant review.

Annabelle Ewing: I have a couple of questions. I am not sure to what extent the witnesses had the chance to hear the previous session—they can obviously look back later—but Professor Woolhouse suggested that there does not appear to be any reason why there should not be a resurgence of staycations, particularly in the Highlands and Islands, this summer. Will the cabinet secretary, given his interest from his constituency's perspective, give his thoughts on those comments?

Michael Russell: I did not hear the specific comments, but I am happy to comment on tourism and hospitality. I would love to see staycations becoming available again and people staying in the Highlands and Islands—particularly, if I may be very selfish, in Argyll and Bute—during the summer, but that will depend on the progress that we make, on the data and on our ability to move to that position. We have been very clear on the indicative dates on which decisions will be made on how we move forward, but we cannot be more specific than that, because we have to see what happens between now and April and May.

I am hopeful. I would love to see staycations being allowed, but the decisions will be driven by the data and where we are rather than by anything else. Nothing would give me greater pleasure than to achieve that. If Professor Woolhouse is confident that we can achieve that, I am glad. I want to see the data and to be driven by the data.

Annabelle Ewing: I am sure that we would all like to see that.

In his announcement this week, the UK Prime Minister seemed to set great store on a particular date—21 June—for an erga omnes approach to life. Does the data support making such a definitive determination that that will be, in effect, D-day?

Michael Russell: We have been very clear about what we expect and about the points that we have set at which decisions will be made and, we hope, things can develop and change. They do not extend as far as that but, to the extent that we agree on things, the programmes are, by and large, not dissimilar from now until, broadly, Easter. There are some small differences of emphasis and dissimilarities, but I do not think that they are major. It becomes more difficult to see precisely what will happen beyond then, but we are hopeful. I am not going to get involved in swapping dates with the rest of the UK. I am confident that we are taking the right and cautious approach at this stage.

Jason Leitch might want to say a word or two more, because he is one of the keepers of the data. He recognises where the decision making is in that regard and informs the Cabinet about it.

Professor Leitch: At a simplistic level, the further out we get, the less certainty we have—that is not complicated. If you read the UK Government's document rather than some of the headlines with the dates attached to them, you see that the further out we get, the more the UK Government caveats its dates. Its version of Mr Munro has written in deep caveats to the 17 May and 21 June dates. That seems to me to be the right thing to do. I said to the media this week that, if you want to circle 21 June in your diary and hope for a staycation in Scotland in July or August, that is terrific. I genuinely hope that that will be possible; my problem is that, at the end of February, I cannot tell you whether it will be.

Annabelle Ewing: Thank you both for your answers. Perhaps, sometimes, newspapers would better serve the population by focusing more on caveats than going for a glib headline, but there we are.

Professor Leitch, I think that on the radio the other morning you said that when we get back to the levels, there could be a different geographical approach. For example, several local authorities could combine to be in the same level and there could be a reconsideration of the restrictions that currently apply to the levels, in terms of what hours of opening and so on might be available to hospitality. What work is going on now to tweak the levels approach that was most recently set out in December? I think that people in the hospitality industry would wish to understand where they might stand as we come to sunnier times.

I would like to hear from Professor Leitch on that to start with, but I would also like to hear comments from Mr Munro and the cabinet secretary.

Professor Leitch: The strategic framework includes the caveat that, all being well, we will move to a levels framework in the week beginning 26 April. Of course, we will have to have given notice of what that will look like before then. The framework does not say that everyone will move to level 3, or that everyone in a local authority area will move to a single number, and it does not say what the levels will contain. It says that all that will be discussed with stakeholders and the Cabinet in the lead-up to that work. The analysis paper that Dominic Munro has already talked about will be part of that. If the situation allows, it is possible that quite a lot of the country will move to level 2.

The most recent version of the levels is the one that we remember. However, if you go back a little bit further, you will remember that, at some points, we had central belt restrictions, not individual local authority restrictions. Therefore, it may be that we could divide the country into different cohorts—groups of local authorities or health boards, or perhaps larger areas than that. Alongside that, there is the debate that we have had with Ms Wishart and others about what we should do with island communities, such as those in Mr Russell's constituency and others. We might have to divide up some local authorities and take different approaches in various areas.

We want the process to be as simple as possible. We do not want to set out levels every week, because that was too often and created confusion for the public, rather than shedding light on the matter, so we have said that we will do that every three weeks. We have also said that what is in each level will be talked about in more depth. The basics will be the same: there will be sections on hospitality, tourism, family interaction and so on. However, issues such as the nature of what hospitality is allowed, whether alcohol can be served, whether there can be two sittings and so on are exactly what we will negotiate over the next two weeks with stakeholders, civil servants and politicians.

Dominic Munro: Professor Leitch has covered most points, but I will elaborate on two.

The point about the contents of the levels is absolutely correct. We will look at that in mid-March. We are already engaging with the business community and others on that, as we have been for some time.

It is important to bear it in mind that, if you ask any stakeholder what they would like, they will typically ask for an easing for their particular sector. We understand why that is, but we need to be really careful that, in considering sensible easings, we do not reduce the effectiveness of the levels, because they are designed to suppress the virus.

There is a process of engagement, and we will continue to engage through to mid-March, but we

need to do that carefully, because the levels have a job to do in suppressing the virus.

On the point about geography, as Jason Leitch says, the regulations are set up in such a way that we could use local authorities as the building blocks—the WHO has some relevant interim guidance on that. However, quite possibly, it will make sense to use bigger agglomerations of local authorities, and, if we need to, go below that area, as we did when we moved Barra and Vatersay into level 4 before the rest of the Western Isles.

We have the flexibility to do all those things and we want to carefully consider what the best approach is before we start using geographically variable levels again. Unfortunately, there is no perfect solution. Every option that we take has some advantages and disadvantages. What we have to do is to find the most sensible approach among those.

11:45

Michael Russell: I do not have much to add to that, apart from to emphasise the point about building blocks. Towards the end of last year, before we had the Barra and Vatersay situation, we faced the question whether Coll and Tiree, Mull and Iona, Jura and Islay and certain outliers including Colonsay should be at level 2 or level 1. It was a difficult decision. Local authorities were the building blocks, but there was a proper recognition of the difference between those islands and, for example, Helensburgh, which is in Argyll and Bute, but not in my constituency. As a result of that, questions were raised, which arose again in a different and more crucial sense in the last couple of months or six weeks at the end of 2020, with regard to Barra and Vatersay. In such circumstances, there are questions that we have to answer.

As Dominic Munro said, there is no perfect answer to this, but there are answers that perhaps meet the current set of circumstances better than the previous ones. That is also true of content. The approach must always be to do with where we are at that moment, what we have learned getting there and what we expect to happen. That is how it should be. The approach has to be flexible.

Maurice Corry: Thank you for your response to my questions on childcare by family members, such as grandparents. They were much appreciated.

What is the Scottish Government's contingency plan for dealing with any reduction in the production of vaccine, particularly the Pfizer-BioNTech vaccine—currently, the machinery that produces it is being changed over—in order to keep the Scottish Government's vaccination plan on track?

Michael Russell: If you talk to any GP who has been involved in the delivery of the vaccine, they will tell you that the biggest challenge is the lumpiness of the supply—you raised that issue a few meetings ago. I believe that the word "lumpiness" was first used in this context by the UK minister with responsibility for the vaccine.

We are capable of delivering very large numbers of vaccinations every day, but we can do that only if the supply flows through. We are taking a four-countries approach to vaccine supply, so the issue is regularly discussed among the four countries' health ministers and at higher-level discussions involving the First Minister; we will continue to keep the issue under review. Provided that the commitments that we understand exist are honoured, we anticipate being able to meet the targets that have been set. However, as you will understand, that is the one thing that is completely outwith our control. We have to have the vaccine in order to vaccinate—that sounds like a tautology, but it is true—and that involves ensuring that the supply continues to flow.

We should reflect on the remarkable nature of where we are. This vaccine did not exist six months ago. It is remarkable that a vaccine has become available so quickly. Of course, there is not just one, but two, with a third one having recently been approved, and you will have seen reports this week about the Johnson & Johnson single-dose vaccine being approved in America. That is a remarkable set of circumstances.

We are gearing up to a global demand for vaccines—it is important not to forget those countries that we do not wish to leave behind; one sees that all the time and it is very important not to forget about that—so supply is bound be problematic. However, I assure Mr Corry that the issue is constantly in people's minds, work is constantly done on it, and there is a constant desire to do what we can do, which is to vaccinate large numbers of people quickly.

Maurice Corry: I want to talk to Professor Leitch about cluster zones springing up. There have been very recent significant rises in case numbers in Edinburgh and the Lothians and in the Dunbartonshire and Stirling area. Case numbers are rising in more deprived parts of those areas. What action is the Scottish Government taking to deal with that?

Professor Leitch: I will briefly add to Mr Russell's response on vaccine supply. It is important to underline that, when supply falls, it falls across the whole of the UK. Scotland is getting our population share, as are the other three countries, and that system is working well.

What can we do? We can plan as best we can for supply. We now know that we will get some

Moderna vaccines, so what does that mean for our ramp-up? We have now proven that we can carry out 400,000 vaccinations a week so, if we get 400,000 doses a week, we can put them in arms. If we get 200,000 doses, we can put them in arms, which, it would seem, is roughly what will happen this week. Pfizer has been very good at keeping in touch. Adapting its factory to ramp up supply was exactly the right thing to do. We have good relationships with the companies, and the procurement people in the four nations of the UK are doing a good job of getting us the vaccines at a country level.

Mr Corry is right that there are community transmission hotspots around the country, as there have always been. They are in East Ayrshire, Clackmannanshire and Falkirk, and we are beginning to see an increase in numbers in the Lothians. Our response is exactly as you would predict it would be. It has got more mature. Local authorities are much more involved. We can send in more case-finding machinery, including mobile testing units and regional testing units. We can talk to those communities via the local authorities and, particularly if they are hard to reach, through third sector organisations and other organisations that reach those groups. In addition, the test and protect system is active and functioning, and its response times are really good.

Of course, we rely on human beings and individual behaviours. There is only so much that we can do about that. It is about communication, using trusted voices and being inside those communities to try to help their understanding. At a superficial level, the increases do not appear to be the result of big rule-breaking occasions, although there is still some of that—there are house parties, and we have mechanisms for dealing with that. There appears just to be a low level of community transmission. People might just have dropped their guard. Even people who follow the rules can catch the virus so, at some level, we all have to be careful. That is why, at this stage in the pandemic, the rule is to behave as though you have the virus.

John Mason: There were questions about ME earlier, and I want to spend a little more time on vaccination cohort 6. I think that there are about one million people in it, so it seems to be one of the largest cohorts, if not the largest cohort. It is also a bit vaguer, because it is not fixed on age; there are bits around the edges. Are we aiming to have reached all those in cohort 6 by mid-April, in line with all nine cohorts? At what stage should people expect to hear about being vaccinated? Parents of disabled young people, for example, are already on at me about that. Should I just tell them to wait and that they will hear by, say, the end of March? Can you say anything more on that? It is probably a question for Professor Leitch.

Michael Russell: I would like Jason Leitch to answer that, but I echo what he said earlier about the fact that we are coming for you. He said that in his typical style, but it is absolutely true. People will be vaccinated. There is no doubt about that. Jason Leitch might want to say more about the details.

Professor Leitch: As Mr Mason said, cohort 6 is complex and large. I would not use the word "vague", but it is certainly more flexible than some of the other groups, because it is not just about getting to people through their community health index number and date of birth. However, we know, in the main, who is in the group, because we have very good joined-up primary care data in this country, which allows us to take out disease codes—the codes that people get because they have diabetes or severe asthma—and find them. We also know where their GP practice is and we can contact them.

Lots of people in cohort 6 already have their appointments. I ask people to be a little more patient. We have not said when we will finish with that group, because it is so big. I ask people to certainly wait until mid-to-late March before they start bombarding the helpline to ask why they have been missed.

Clearly, we cannot do a million people in the same week; we have to space them out with the supply of vaccine, but we will get to them. The First Minister, along with the three other UK countries, has publicly committed, pending supply, to perhaps April for the top nine groups, which includes cohort 6 plus everybody over 50. That means that March has to go faster than February—that is clear—which is why we need the supply to come. There needs to be patience just now, then in mid-March to the end of March we will be able to give people information if they feel that they have been missed off. Being missed off is a rare event not a common event, so do not panic if you have not heard.

John Mason: That is helpful; that gives us a steer on what we can say to constituents; some are more patient than others, let us say.

On a slightly separate subject, in the previous evidence session we talked about quality-adjusted life years, which was a new term for me; I think that the abbreviation is QALYs. Normally we would spend £20,000 to £30,000 on drugs and that would keep somebody alive for a year, but it appears that we are spending a lot more than that if it is Covid. I do not know whether this is more for the cabinet secretary, but are those kinds of indicators relevant or are we in quite a different situation from a normal drugs purchase situation?

Michael Russell: That is for Jason Leitch, because that is a difficult and sensitive question and I want to hear a clinician's view.

Professor Leitch: It is QALYs, Mr Mason; it is a well-trodden public health path that gets quite complex quite quickly. It is how public health in the round and new medicines conversations happen. It is not about saying, "a fiver gets you this" or "a tenner gets you this," it is a much more complex environment in which the cost to society of a new drug is judged. Say a new drug for multiple sclerosis or kidney cancer costs 10p. Clearly, you should invest in it, but if it costs £10 million to save one year for an 85-year-old—forgive me—is it worth it? At some level, you make those judgments, but it is not binary; it is not that once you get over a certain threshold, you can buy the drug and if you do not, you cannot buy it. The Scottish Medicines Consortium is our mechanism for that.

I did not hear the previous evidence session, but I will watch it back. I imagine that the QALYs conversation was in relation to the cost of Covid care in the round, including testing, restrictions and everything else that has gone on. We are not spending that much money on drugs for Covid, because there are not many drugs for Covid, so it relates to the overall cost. In time, that will be a big matter of research, a big consideration for inquiries and on an on-going basis in relation to what the pandemic has cost society—not only in Government investment but the harm that we have caused by our responses and the harm that Covid has caused families, and QALYs will be part of that conversation. I have not seen any work that relates that to Covid yet, but it will come.

John Mason: That is helpful. We were given very rough and ready figures, and similarly to you, Professor Leitch, the previous witnesses gave very qualified answers.

The Convener: That concludes questions from members. I thank the cabinet secretary, Professor Leitch and Mr Munro for their evidence. That concludes our business for the meeting as we have no legislation before us. The clerks will update members on the arrangements for the next committee meeting in due course.

Meeting closed at 11:59.

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