

INTERVIEW

Neil Ferguson puts his faith in the herd

So many of us have now had Covid that the vaccine programme should quash the virus by autumn, says
Professor Lockdown



Ferguson had to quit as an adviser after breaching lockdown rules

RICHARD POHLE

Andrew Gregory, Health Editor

Sunday January 10 2021, 12.01am GMT, The Sunday Times

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He is one of the world's most influential disease modellers, whose warnings led to the UK's first lockdown. Professor Neil Ferguson, more than any other scientist, bore the brunt of criticism from those sceptical about the shutdown.

Nine months on, amid a surge in infections, a variant wreaking havoc and hospitals filled with victims, we are back in lockdown for a third time in 300 days. Yet the government's former top epidemiology adviser is optimistic about 2021.

“I think we will see growth rates slow,” Ferguson said. “We may see a decline, and that may be slightly aided by the fact that there is quite a lot of herd immunity in places like London.

“Maybe 25% or 30% of the population has now been infected in the first wave and second wave. So that adds to the reduction of transmission.”

Herd immunity, also known as herd protection, is when so many people have resistance to an infectious disease that it runs out of people who can catch it and pass it on. This can be achieved through infection, vaccination or both.

Ferguson, like most scientists, believes herd immunity against Covid-19 should be achieved by vaccination, not by letting the virus rip through the population. Yet because Britain has become one of the worst-hit countries in the world, herd immunity is edging closer.

In the short term, Ferguson, 53, is in no doubt the UK faces a bleak start to the year. Yesterday a further 59,937 lab-confirmed cases of Covid-19 were recorded in the UK, bringing the total to more than three million. The number of Covid-19 patients in hospitals surpassed 32,000 for the first time.





A busy Richmond Park in London

ALEX LENTATI

Ferguson's predictions for the month to come are grim. "How high could this go? My best estimate is that it will go a bit higher but then hopefully plateau. Some of it is baked in.

Hospitalisations are likely to go up 10% or 20% almost regardless of what we do. New admissions per day are going to go up further."

The epidemiologist, who had warned of up to 500,000 deaths if we chose to do nothing last spring, adds: "Even optimistically it will be quite difficult to avoid another 20,000 deaths. It's highly likely we'll hit 100,000."

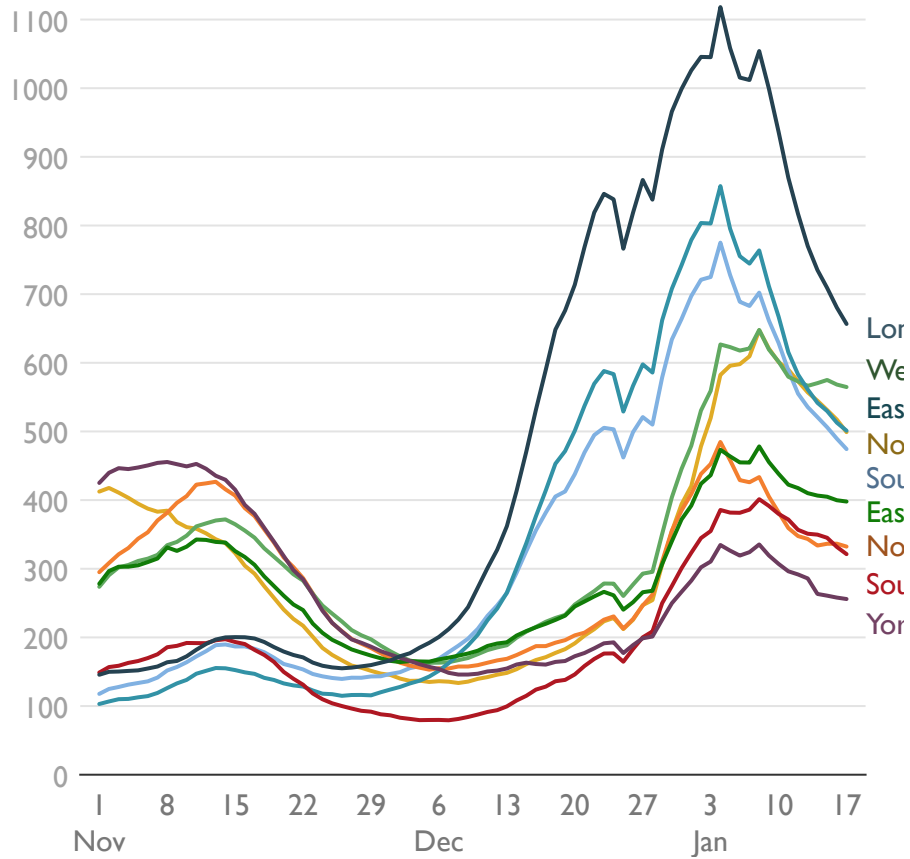
The [virus's rampant march through the capital over](#) the past month is why Ferguson, using modelling and antibody test data, believes "something like a third of the population of London" has been infected. "Because London was the most affected area in the first wave, probably something like 15% of the population got infected that time. And we've now probably seen the same again."

Northwest England is another area where large numbers have been infected. "The northwest saw a lot of transmission in October and November," he says. "They may well be up to 15%, 20%." Nationally, Ferguson believes between 10% and 15% of the UK population have been infected since the start of the pandemic.

CORONAVIRUS

Covid by region

Weekly infection rate per 100,000 by English region



Last updated on Jan 23

Chart: The Times and The Sunday Times • Source: Coronavirus.data.gov.uk

To achieve herd immunity against Covid-19, a substantial proportion of Britons need to be vaccinated as well. The number of people who must have immunity to protect a population varies according to how easily a disease is transmitted. Herd protection against measles, one of the world’s most contagious diseases, requires about 95% to be immune. The remaining 5% will be safeguarded by the fact that measles will not spread among those who are vaccinated. For polio, the threshold is about 80%.

The proportion of the population that must be vaccinated against Covid to achieve herd immunity is not known. It is a critical area of research and is likely to vary according to the community, the vaccine, the populations prioritised for vaccination and other factors.

Most scientists and health experts think at least 80% will be required to defend a population against Covid-19.

Even if such a proportion can be reached through a combination of vaccinated and infected Britons, unknowns remain, Ferguson said. “We don’t know the extent to which immunity completely blocks infection — neither natural immunity nor immunity you would get from vaccines.”



Police on Clapham Common
MARTYN WHEATLEY

However, being nine months into the crisis gives Ferguson and other scientists a clearer picture — and it’s good news.

“If you get infected once, then at least for a year or more you will have quite a lot of protection against disease, a bit like a vaccine,” he said. “You’re not necessarily protected against

being infected again, or transmitting. You're just not very likely to get very sick. There are all of these caveats around immunity. It's true of the vaccine as well as natural infection."

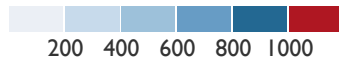
What about the vaccines? Their rapid development — and impressive trial results — is a reason Ferguson is more optimistic now than he was last March, he says.

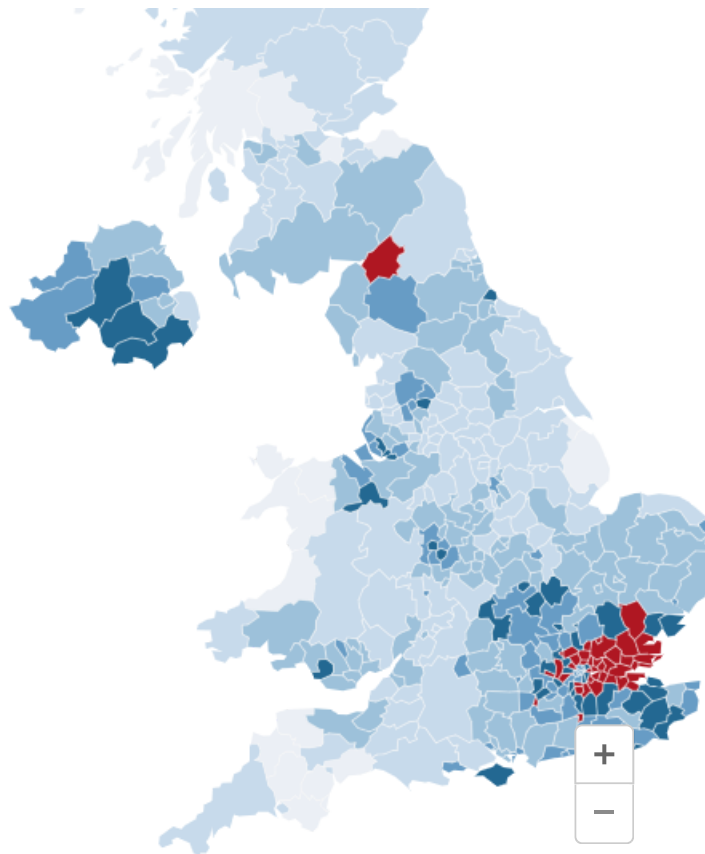
On Friday a third Covid vaccine, from the American biotech firm Moderna, [was approved for use in the UK](#). The government has ordered 17 million doses. Although they are not expected to arrive until spring, Ferguson says it is the fact that the Moderna and Pfizer-BioNTech vaccines have "incredibly high efficacy" that gives him hope.

CORONAVIRUS

Covid-19 in the UK

Weekly coronavirus cases per 100,000 people,
week to January 3





Map data: © Crown copyright and database

Source:

“Admittedly, [they are effective] against symptomatic disease, but that probably means they offer a fair degree of protection against infection and transmission as well,” he said.

For those who do fall seriously ill, huge progress has been made in nine months with treatment options. “We’re better at treating people — people survive better,” he said.

Ferguson, a member of the government’s New and Emerging Respiratory Virus Threats Advisory Group (Nervtag), says a crucial task over the next few months will be tracking the impact of the vaccination programme.

“We’ll measure two sorts of impact,” he said. “One will be the direct impact. If you look at people who’ve been vaccinated — what’s their chance of getting infected, of getting hospitalised, of dying from Covid?” He expects all the vaccines, including the Oxford-AstraZeneca jab, will offer a “high level of protection”.

The second will be to monitor how the vaccine affects virus transmission.



Walkers in Southend
JOHN KEEBLE

In the meantime, will the lockdown help us get a grip on the virus? “This is the million-dollar question,” he said. “It depends on exactly how much more transmissible the variant is. We achieved an R of about 0.6 in the first lockdown. That was with effectively old variants. And if you add 50% to that, then you’re at 0.9, so we have some chance that this new lockdown, if it’s as effective as the first, could get R below 1.”

The reproductive index — or R — is currently thought to be between 1 and 1.4. It refers to the number of people to whom an infected person passes the virus.

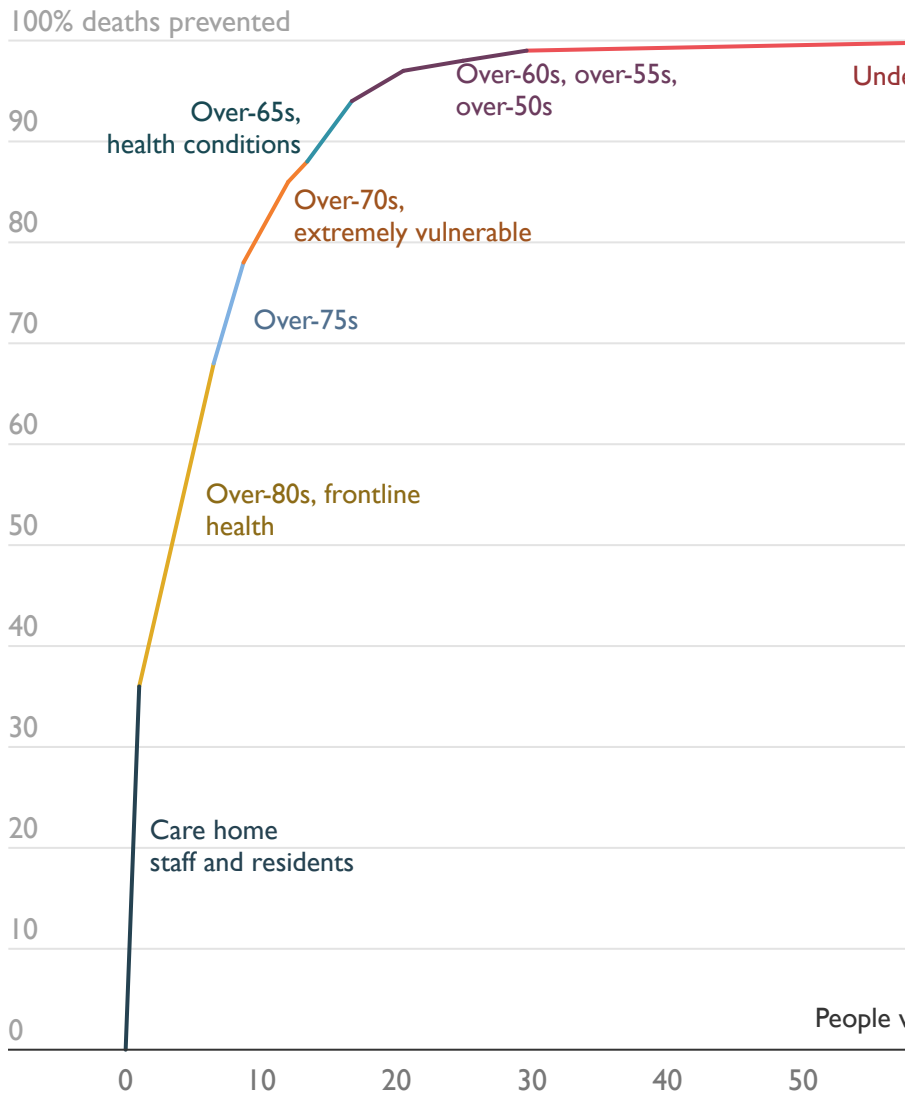
Ferguson said one factor was that [the third lockdown is less restrictive than the first](#). Unlike last spring and the second national lockdown in November, places of worship remain open for prayer and services and for ceremonies such as weddings and funerals, for example.

“We’re not certain that this new lockdown is quite as stringent as March and April of last year, when the streets were deserted and literally nobody was doing anything. It’s going to be quite a close-run thing. If we do see a decline, it’s unlikely to be as fast as we saw for instance in April and May of last year.”

VACCINATIONS

Instant impact

Vaccinating the first four priority groups could prevent 88% of all future Covid deaths



Source: Covid-19 Actuaries Response Group

Ferguson laughs when I ask him if this will be our last lockdown. The Imperial College London professor, who dramatically quit as a government adviser last May after it was revealed [he allowed a woman he was seeing to visit his home](#) during the first lockdown, pauses before answering.

“I hope it will be, but that cannot be guaranteed. That will critically depend on how quickly we can get vaccine into people’s arms and then how effective is the vaccine. If I was forced to choose, I would say it’s likely to be but that we’ll still probably have periods where in particular areas and particular times we need to slightly ramp up social distancing again.”

Boris Johnson has warned it will take time to ease lockdown restrictions in England, which could be in place until the end of March.

Will that be long enough? “It depends critically on how quickly we vaccinate people,” Ferguson said. “If we meet the [vaccine] timeline he’s talking about and the vaccine does really offer a good deal of protection, particularly against severe disease, against people being hospitalised, I think we can start thinking about relaxing measures to a degree by March. And probably implementing them at the end of that month. Like him, I would caveat it with a lot of ifs.”

He added: “In an optimistic scenario, where we get high levels of vaccine coverage and it’s highly effective, there is a scenario where by the autumn we really have many, many fewer restrictions than we have now. We’re almost basically back to normal.”



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in the queue

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Even if the year turns out better than expected, we will have to live with the threat of the virus for years, Ferguson says.

“It will become endemic. It’s possible with a high level of coverage we may have a period of time in the UK where we don’t see much in the way of transmission but it’ll be somewhere else in the world and get reintroduced. We have to learn to live with this virus long term, just as in the same way we live with the influenza virus or coronaviruses. The long term possibility for control is really around ensuring continuous high levels of vaccination coverage. And that may involve people being revaccinated regularly.”

It could be worse, Ferguson says. “What I’m feeling positive about is that this variant didn’t hit us ... if it had risen two, three months earlier, we would have faced a much worse autumn without the immediate prospect of vaccinations.”

The priority groups for vaccination — the old, especially those in care homes, health and social care workers and the clinically extremely vulnerable — should have a degree of protection within two months, he added.

“We will be able to vaccinate a large proportion of the population by Easter. Even if we don’t quite make the prime minister’s timeline, it’s highly likely we’ll make those key groups by mid-March.”





Ambulances queuing at Royal London Hospital
ANDY RAIN

HOW THE NEXT FEW MONTHS COULD PLAY OUT

Best-case scenario

Everyone starts abiding by the restrictions and the virus begins to wane. The R number — the average number of new infections produced by one infected person — gradually drops to 0.9, the target government advisers believe is possible.

After a tough January for the NHS, the pressure eases in February as a disciplined lockdown takes effect. Hospitals stay very busy because patients take time to recover, but work begins on the backlog of non-Covid treatment.

All 420,000 care home residents get their first vaccination by January 31, and two weeks later, by mid-February, all of Britain's 15 million most vulnerable people have had their first dose. Restrictions can start to be eased in March, with different areas cautiously unlocking at different speeds. By late summer, social distancing measures remain, but the country is back to normal.

More likely scenario

The lockdown has an effect on the spread of the virus, but turning the tide of infections is a slow process, and case rates are still high in February.

Some regions are unlocked gradually in spring, but many need severe restrictions.

Large numbers of people continue to be infected, making the task of vaccination harder, which, in turn, extends the pandemic. NHS staff are more likely to be infected or forced to self-isolate.

By autumn we have managed to get back to how things were last autumn.

Worst-case scenario

The lockdown restrictions turn out to be unable to stop the spread of the virus. The reproduction number never gets below 1 and the crisis continues to worsen.

Hospital admissions continue to mount over the next three months. The health service cracks under the pressure. Those with the virus are more likely to die or suffer long-term ill health because there are not the beds or staff to save them.

People with other conditions also feel the impact. Urgent cancer treatments and heart surgeries are delayed for months. Elective procedures such as hip or knee operations are put off until 2022.

Further spread also requires a longer lockdown, into April and possibly beyond. That longer shutdown frustrates millions, which leads to further rule-breaking, which in turn fuels the virus.

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