Coronavirus

Does the Omicron variant mean Covid is going to become more transmissible?

As new strain dampens idea pandemic might be diminishing, what does the future hold for coronavirus?

Coronavirus – latest updates

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When scientists predicted, months ago, that Covid-19 could be entering an endemic phase, many felt ready for the crisis period of the pandemic to be over. The tantalising suggestion that coronavirus might, at some foreseeable point, be just another seasonal cold felt welcome. But the emergence of the Omicron variant, just weeks before Christmas, shows this is not guaranteed to be a smooth or quick transition.

Will the virus become milder?

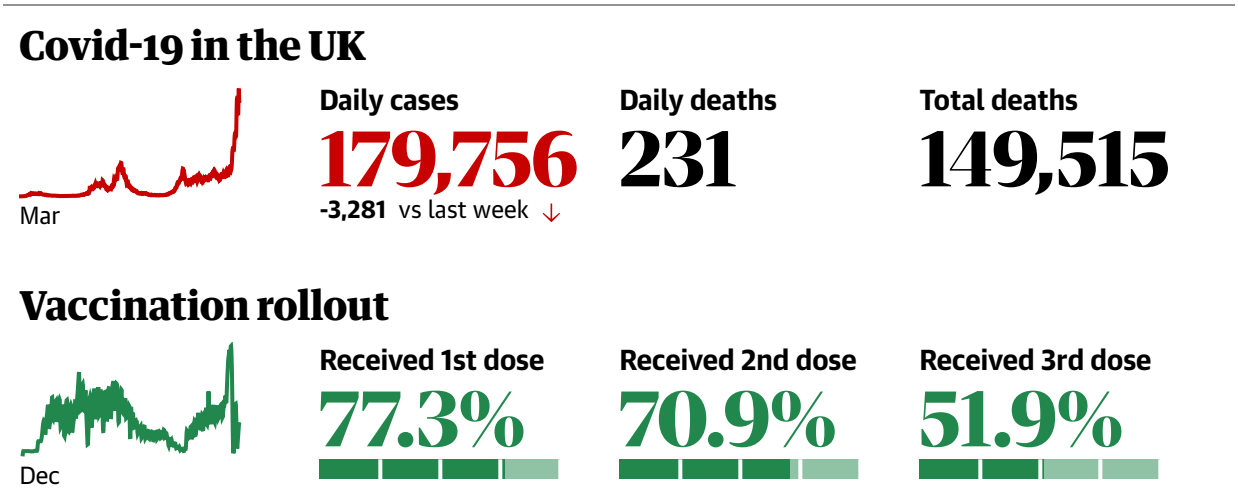
A recurring suggestion is that pathogens evolve, over some undefined period, to be more transmissible and less virulent, bringing virus and host towards a state of benign

In the case of coronavirus, there is also an obvious hole in the argument: transmission normally occurs before symptoms start or during the earliest stage of symptoms, meaning that severity of illness has little influence on the spread of the virus.

The impact of Covid may become less each year as immunity builds up through infection, vaccination and - possibly - annual boosters.

Will it keep getting more transmissible?

Yes, probably. "Strains that transmit more easily and that evade existing immunity will have an advantage over those strains which are less transmissible and more susceptible to immunity," said Prof Kit Yates, a senior lecturer in mathematics at the University of Bath. We have already seen this occurring with the shift from the original variant, which had a basic R number of about 3, followed by Alpha, estimated to have an R0 of 4-5 and Delta, with an R0 of 6-8.



Cases and deaths as published 5 Jan 2022. Vaccinations as % of total population (including under 18s), published 4 Jan 2022. Weekly change shows difference from 7 days ago. Source: data.gov.uk.

"There's no reason to believe this won't go any higher," said Yates. "Measles, which is one of the most infectious human-to-human diseases, has an R0 which has been estimated to be as high as 18. There's certainly still room for the R0 of Covid to increase."

Scientists say predicting where the ceiling might be is extremely difficult. "It's probably not very sensible to try and second-guess that," said McNally. "Numerous human pathogenic viruses have been co-evolving with us for hundreds of thousands of years. So I don't think there could ever be a confident prediction of a ceiling being reached."

On the plus side, R0 is a less pressing concern in a vaccinated population, where there is more protection from serious disease.

Will it keep escaping our vaccines?

To some extent, although scientists are not expecting new strains to completely evade immunity and put us back to square one. “The broad scientific consensus is that this is not what will happen with Omicron,” said Yates. “It is believed that existing immunity will still provide some defence against the new variant, especially against severe disease.”

There is also a limit to how much the virus’s spike protein can evolve, because the spike is the key that allows it to infect our cells.

Nevertheless, there is still a scenario where protection is weakened enough to require an update to existing vaccines - and companies are already playing out whether Omicron meets these criteria. This poses vaccine makers with a dilemma. One option is to make a new variant vaccine that is closely matched to Omicron, for example. This creates a vulnerability, however, because new variants could emerge from Delta or earlier strains, for which the updated vaccine would be an even worse match. And if different strains are dominant in different regions, the question of which vaccines to deploy where becomes complicated.

“We’re questioning whether chasing the globe to hunt down the next variant to tweak the vaccine again and again is necessarily the best way of going,” said Prof Danny Altmann, an immunologist at Imperial College London.

He and others are investigating vaccine strategies that would give broader protection, which they hope will be less sensitive to future mutations of the spike protein. “We’d love to slow down and do the homework properly and find out which version of this is going to give you a future-proofed answer,” he said.

coexistence. If Omicron is spreading so quickly, some wondered, perhaps it will at least be milder. But experts say this expectation has no scientific basis. “Put simply, this has been one of the most baffling misinformation myths peddled during the pandemic,” said Prof Alan McNally, director of the Institute of Microbiology and Infection at the University of Birmingham. “There is almost no evidence of any human pathogenic virus evolving towards reduced virulence.”

The simplistic argument behind the idea is that if a pathogen kills its host, or makes them too sick to leave the house, then it gives itself a worse chance of propagating. So by the logic of survival of the fittest, there would be a selective pressure for milder strains. Sadly, the dynamic is more complex in the real world.

In England, about one in 60 people tested positive for Covid-19 in the week ending 27 November

Estimated average percentage of the population that had Covid-19

“It’s really unpredictable what will happen to the evolution of the host or the virus,” said Brian Ferguson, an immunologist at the University of Cambridge. “You can pick out examples of things going one way or the other depending on what point you want to make.”

The new year, like all new years, will hopefully herald a fresh sense of cautious optimism, and there is certainly much for us to focus on in 2022 - the US midterms, the ongoing fight for racial justice, the next round in the struggle against the pandemic and a World Cup.

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