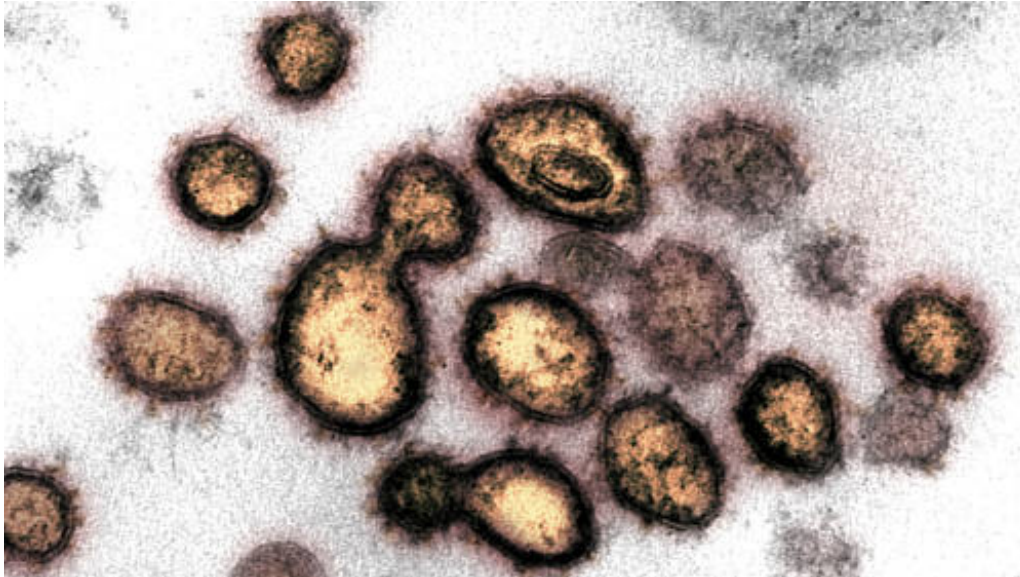


Letter: The Oxford study figure has no empirical justification

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Your article "[Coronavirus may have infected half of UK population — Oxford study](#)" (FT.com, March 24) reports conclusions of a modelling study. Having read the study, we have major concerns. [see below](#)

This figure is based on an assumption for which the authors offer no empirical justification. This is that only one in 1,000 infections will need hospitalisation. Yet more than one in 1,000 people have already been hospitalised in the Lombardy region of Italy, despite stringent control measures being implemented (population of Lombardy: 10,060,574; hospitalised: 10,905; hospitalisation rate per 1,000 population: 1.08; deaths: 4,178; deaths per 1,000 population: 0.42; [data](#) updated to 5pm March 24). Our Italian colleagues professors Walter Ricciardi and Anna Odone have data indicating much higher rates in some towns in Lombardy.

We are also concerned that the study paper included a contact for press inquiries even before it was peer reviewed, or even checked against the Italian hospitalisation and death data. While the authors' intention may have been to highlight the need for the serological antibody test for Covid-19 infection that we agree is needed now, we are concerned that the sensationalist media headlines the paper is generating have dangerous implications.

First, if it is believed, then it threatens control efforts everywhere, as people will think they have probably already had it. Second, politicians are desperate for the current situation not to be as bad as it appears and to be able to relax what we believe are the

minimum restrictions necessary.

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Coronavirus may have infected half of UK population — Oxford study

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24 mars
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If the results of the study are confirmed, they imply that fewer than one in a thousand of those infected with Covid-19 become ill enough to need hospital treatment © Tolga Akmen/AFP

The new coronavirus may already have infected far more people in the UK than scientists had previously estimated — perhaps as much as half the population — according to modelling by researchers at the University of Oxford.

If the results are confirmed, they imply that fewer than one in a thousand of those infected with Covid-19 become ill enough to need hospital treatment, said Sunetra Gupta, professor of theoretical epidemiology, who led the study. The vast majority develop very mild symptoms or none at all.

However, the modelling by Oxford's Evolutionary Ecology of Infectious Disease group has been challenged by other scientists. They have pointed out that the study presents possible scenarios — based on assumptions about the nature of the virus, its virulence and its arrival from China — that contradict those supported by most epidemiologists.

The Oxford research suggests that Covid-19 reached the UK by mid-January at the latest and perhaps as early as December. It spread invisibly for a month or more before the first transmissions within the UK were officially recorded at the end of February and the epidemic started to grow exponentially.

"We need immediately to begin large-scale serological surveys — antibody testing — to assess what stage of the epidemic we are in now," Prof Gupta said.

The research presents a very different view of the epidemic to the modelling at Imperial College London, which has strongly influenced government policy. “I am surprised that there has been such unqualified acceptance of the Imperial model,” said Prof Gupta.

However, she was reluctant to criticise the government for shutting down the country to suppress viral spread, because the accuracy of the Oxford model has not yet been confirmed and, even if it is correct, social distancing will reduce the number of people becoming seriously ill and relieve severe pressure on the NHS during the peak of the epidemic.

The Oxford study is based on what is known as a “susceptibility-infected-recovered model” of Covid-19, built up from case and death reports from the UK and Italy. The researchers made what they regard as the most plausible assumptions about the behaviour of the virus.

The modelling brings back into focus “herd immunity”, the idea that the virus will stop spreading when enough people have become resistant to it because they have already been infected. The government abandoned its unofficial herd immunity strategy — allowing controlled spread of infection — after its scientific advisers said this would swamp the National Health Service with critically ill patients.

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But the Oxford results would mean the country had already acquired substantial herd immunity through the unrecognised spread of Covid-19 over more than two months. If the findings are confirmed by testing, then the current restrictions could be removed much sooner than ministers have indicated.



Although some experts have shed doubt on the strength and length of the human immune response to the virus, Prof Gupta said the emerging evidence made her confident that humanity would build up herd immunity against Covid-19.

To provide the necessary evidence, the Oxford group is working with colleagues at the Universities of Cambridge and Kent to start antibody testing on the general population as soon as possible, using specialised “neutralisation assays which provide reliable readout of protective immunity,” Prof Gupta said. They hope to start testing later this week and obtain preliminary results within a few days.

This article has been amended since original publication to clarify the fact that the modelling is controversial and its assumptions have been contested by other scientists.