

Vaccines may not signal immediate end to epidemic, researchers say

January 22 2021, by Dr Sabine L. Van Elsland, Stephen Johns



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The vaccine rollout may not signal an immediate end to the COVID-19 epidemic, according to latest modeling from Imperial's COVID-19 Response Team.

Interim results from the team's model suggests that the timing of relaxing non-pharmaceutical interventions (NPIs), such as social distancing, while managing the impact on hospitals, will depend on the speed and uptake of the vaccine rollout.

Imperial's researchers say that lifting COVID restrictions with the current number of hospital patients could lead to hospitals continuing to be overwhelmed for several weeks.

The researchers estimate that in all scenarios, full-lifting of restrictions before the summer will lead to prolonged and potentially multiple periods of pressure on hospitals, and substantial additional deaths.

The researchers say that partial lifting of NPIs before patient numbers in hospital have dropped significantly will have the same consequences.

The team say that COVID is currently overwhelming hospitals and there is a severe shortage in resources, including beds and staff. There are nearly 40,000 COVID patients currently in [hospital](#) and the researchers say that this number will take some time to fall significantly.

The researchers warn that UK population immunity is still low and current level of infections, hospitalisations and deaths are still very high.

Imperial's researchers were speaking at a Science Media Centre briefing, alongside academics from the University of Edinburgh and University of Warwick.

How many people need to be vaccinated to achieve 'herd immunity'?

Dr. Marc Baguelin, from the School of Public Health, said: "Despite the

large number of deaths already, population immunity is still limited. We estimate around 19% of the UK population had been infected by mid-January.

"With the previous [coronavirus](#) variant we estimate that we needed 60% of the population to be protected to bring R below 1, whether through natural infection or immunization.

"This might be difficult to be reached as efficacy—in particular against infection—means that we would need to vaccinate even more people to get this level of protection at the population level.

"The emergence of the new variant, which is more transmissible, means that this level needs to be even higher and that it might not even be possible to bring R below one."

How long will the vaccine rollout take?

Dr. Anne Cori, from the School of Public Health, said: "It's important to highlight that the vaccine rollout will take a lot of time, even in most optimistic scenario it would take until late April to give only one dose to everyone eligible in the UK population."

What impact will the vaccine rollout have and when can restrictions be relaxed?

Dr. Cori said: "The impact of the vaccine will not be instantaneous, and will only be seen once we get high coverage of the vaccine. This depends on how fast it can be rolled out and how many people take it.

"We used our model to explore a large number of scenarios with respect to the roll-out and impact of vaccination. In all scenarios, our model

suggests that full-lifting of NPIs before the summer will lead to prolonged and potentially multiple periods of pressure on hospitals, and substantial additional deaths.

"Lifting NPIs while managing the impact on hospitals will take weeks to achieve.

"One of the key unknowns is the efficacy against infection—if this is low you might still have a lot of transmission going on.

"The extent to which we can relax NPIs needs to be done gradually and depends on the proportion of the [population](#) protected, and the effectiveness of the vaccines."

Dr. Baguelin added: "We want to stress that this is not the end of the story, and there needs to be a lot of thought about the future vaccination strategy.

"There also remain questions about long-COVID and the future of the epidemic."

Dr. Cori added: "In the short term, it is critical that everyone, including those who have received the [vaccine](#), maintain distancing measures as much as possible to reduce deaths."

Provided by Imperial College London

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