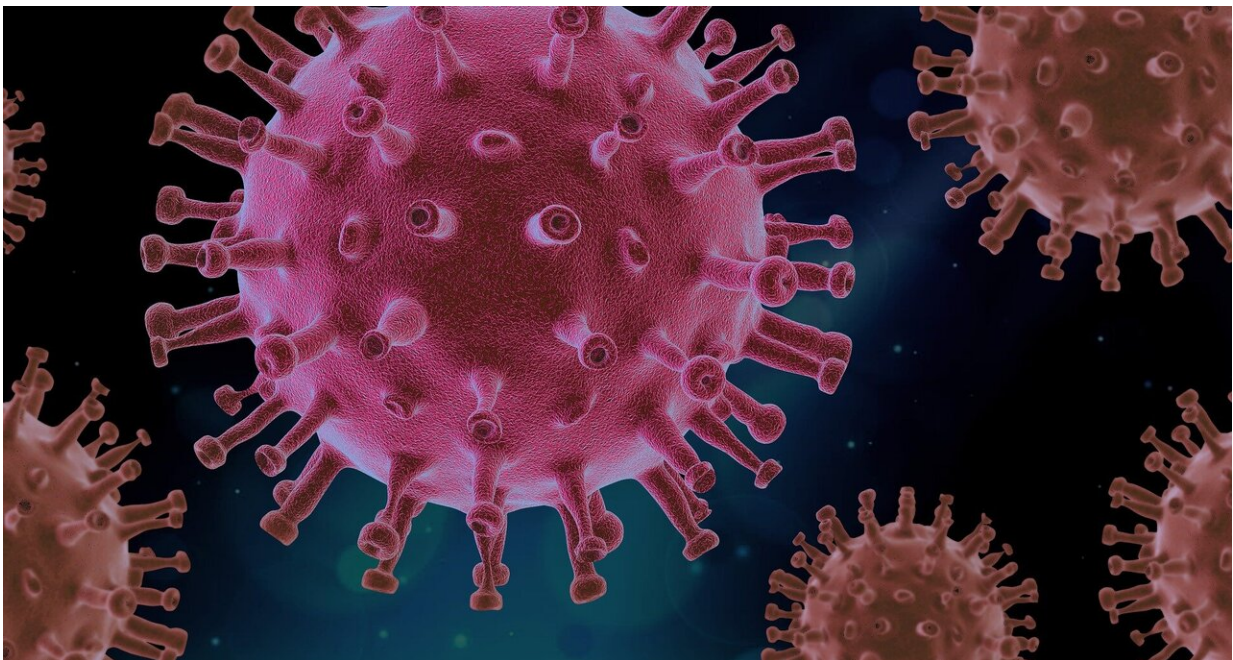


Early analysis shows some reduction in hospitalization for cases of Omicron vs. Delta in England

December 22 2021, by Dr Sabine L. Van Elsland and Emily Head



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Estimates suggest patients with Omicron cases are 15% less likely to attend hospital, and 40% less likely to be hospitalized for a night or more, compared to Delta.

The researchers stress that these estimated reductions in severity must be

balanced against the larger risk of infection with Omicron, due to the reduction in protection provided by both vaccination and natural infection. For example, at a population level, large numbers of infections could still lead to large numbers of hospitalizations. They say the estimates provided in this paper will assist in refining mathematical models of potential healthcare demand associated with the unfolding European Omicron wave.

The new report from the Imperial College London COVID-19 response team estimates hospitalization risk for Omicron cases in England. It includes all PCR-confirmed SARS-CoV-2 cases in England between 1-14 December 2021 where the variant causing infection could be identified from genetic data or via S gene target failure (SGTF). The data set included 56,000 cases of Omicron and 269,000 cases of Delta.

In the study, [hospital](#) attendance was defined as any record of attendance at a hospital by a confirmed case in the 14 days following their positive PCR test, up to and including the day of attendance. A secondary analysis examined the subset of attendances with a length of stay of one or more days. The researchers caution that insufficient time has passed for enough data to have accumulated for severity to be judged for more severe outcomes such as intensive care unit admission or death.

Reduced risk of hospitalization

The estimates suggest that [patients](#) with Omicron cases have, on average, a 15-20% reduced risk of any hospitalization and an approximately 40-45% reduced risk of a hospitalization resulting in a stay of one or more nights. Reinfection is associated with approximately a 50-60% reduction in hospitalization risk compared with primary infections.

However, after adjusting estimates to account for only one in three reinfections being identified, the estimated difference in intrinsic

hospitalization risk (i.e., defined for primary infections in unvaccinated people) between Delta and Omicron is reduced (i.e., 0-30% reduced risk of any hospitalization) but the estimated reduction in risk of hospitalization due to previous infection is increased (around 55-70% reduction).

Moderately reduced severity is also supported by the observation that the mean lengths of hospital stay for Delta and Omicron cases in the study were 0.32 (95%CI: 0.29-0.34) and 0.22 (95%CI: 0.15-0.28) days, respectively. However, it should be noted that Omicron cases on average had less follow-up time in the study.

The researchers say that as more data accumulate, with longer periods of follow-up, assessment of more severe outcomes will become feasible. They state that it is quite possible that larger reductions in hospitalization risk for Omicron versus Delta may be estimated for ICU admission and death, given that remaining immune protection against more severe outcomes of infection are expected to be much higher than those against milder disease.

Varied prior immunity

As different groups of the English population have widely varying prior immunity from both vaccination and natural infection, the researchers also provide estimates stratified by vaccination status, though the researchers caution about over-interpreting these trends due to limited sample sizes.

The estimates suggest that individuals who have received at least two doses of either AstraZeneca, Pfizer or Moderna vaccines have substantially reduced risk of hospitalization compared with primary infections with Delta in unvaccinated individuals, even if protection against infection has been largely lost against the Omicron variant.

Contextualizing Omicron's severity

The authors say it is essential to place the severity of Omicron in the context of reinfection risk in countries, like England and South Africa, where a large proportion of the population may have already been infected.

For example, a total of 9.8 million people had tested positive for SARS-CoV-2 in England by 21 December 2021, equating to 17.3% of the population. Given that reported cases may only capture a third of total infections, over half the English population may have been infected prior to the start of the Omicron wave. Hence the hospitalization rates in England for Omicron are being strongly affected by infection-induced immunity.

Professor Neil Ferguson from Imperial College London said, "Our analysis shows evidence of a moderate reduction in the risk of hospitalization associated with the Omicron variant compared with the Delta variant. However, this appears to be offset by the reduced efficacy of vaccines against infection with the Omicron variant. Given the high transmissibility of the Omicron virus, there remains the potential for health services to face increasing demand if Omicron cases continue to grow at the rate that has been seen in recent weeks."

Professor Azra Ghani from Imperial College London said, "Whilst the reduced risk of hospitalization with the Omicron variant is reassuring, the risk of infection remains extremely high. With the addition of the booster dose, vaccines continue to offer the best protection against infection and hospitalization."

More information: The full report is available at www.imperial.ac.uk/mrc-global-...50-Severity-Omicron/

Provided by Imperial College London

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