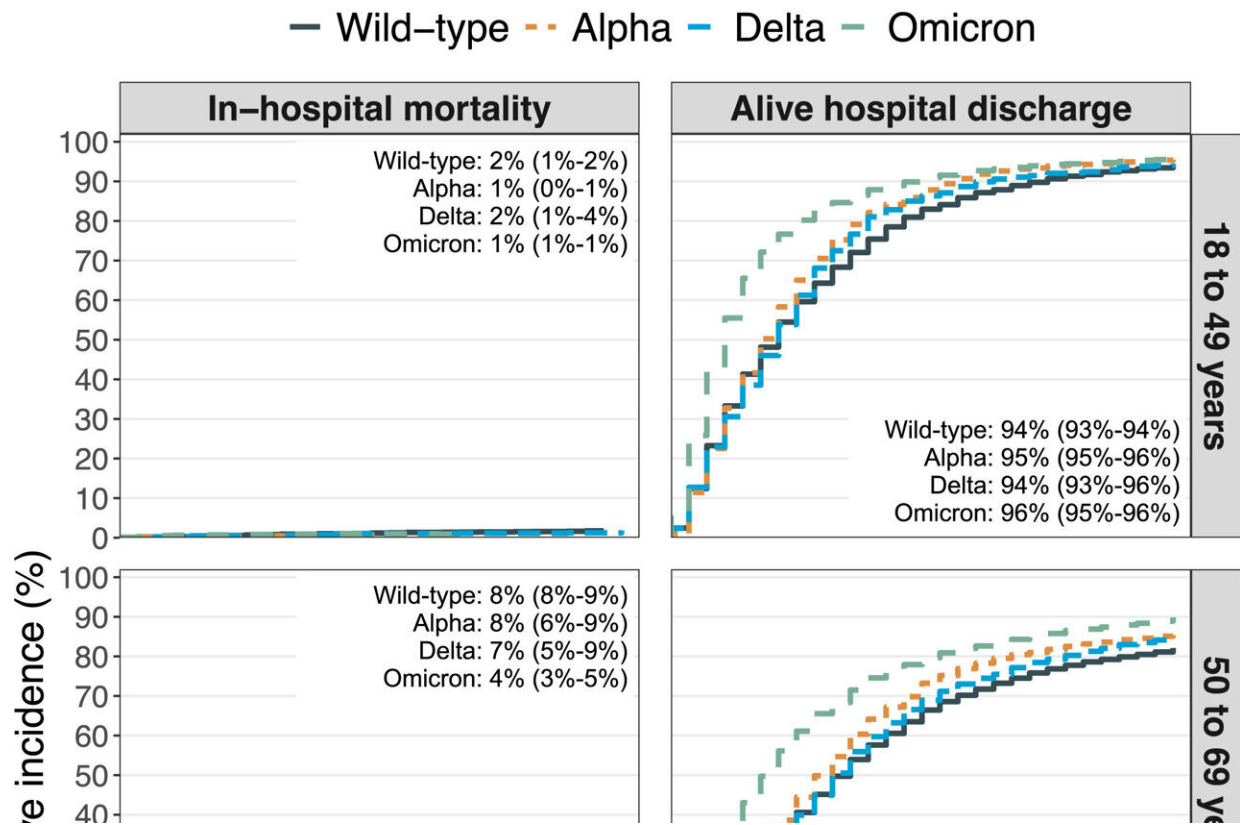


# Factors other than weaker variants behind reduced mortality in COVID-19: Study

February 6 2024



Age-stratified 28-day cumulative incidence of in-hospital mortality and alive hospital discharge. Note: The text in the figure describes the cumulative incidence at 28 days except for in-hospital mortality among participants 18–49 years in the Wild-type group (day 27) Alpha group (day 16), and Omicron group (day 27). Credit: *The Lancet Regional Health—Europe* (2024). DOI: 10.1016/j.lanepe.2024.100855

Researchers at Karolinska Institutet, together with partners in the Horizon Europe EuCARE project, have shown that the reduced mortality from COVID-19 is not necessarily due to the fact that later variants, such as omicron, have been less severe. Rather, the reduced mortality seems to be due to several other factors, such as immunity from previous vaccinations and previous infections.

[The study](#) is published in the latest issue of *The Lancet Regional Health Europe*.

The researchers conducted a study using [patient data](#) from more than 38,500 hospitalized patients with COVID-19, from the start of the pandemic to October 2022. The data comes from hospitals in 10 countries, including two outside Europe.

The data showed that in-hospital mortality decreased as the pandemic progressed, especially since omicron became the dominant variant. However, when the researchers modeled the [mortality rates](#) for different variants (Pre-alpha, alpha, delta and omicron) and took into account factors such as age, gender, comorbidity, vaccination status and time period, they saw far fewer differences and weaker associations. They also saw differences between age groups, highlighting the importance of conducting separate analyses for different [age groups](#).

"Overall, our findings suggest that the observed reduction in mortality during the pandemic is due to multiple factors such as immunity from vaccination and previous infections, and not necessarily tangible differences in inherent severity," says Pontus Hedberg, first author of the study.

## **Omicron variant no less severe**

Understanding the [disease course](#) and outcomes of patients hospitalized

with COVID-19 during the pandemic is important to guide [clinical practice](#) and to understand and plan future resource use for COVID-19. A particularly interesting finding is that the inherent severity of omicron has not necessarily been significantly reduced, but that other factors are behind the reduction in mortality.

"The fact that omicron can cause severe disease was seen in Hong Kong, for example, where the population had low immunity from previous infections and low vaccination coverage. In Hong Kong there was a relatively high mortality from omicron," says Pontus Hedberg.

## **Protecting the elderly and those with underlying diseases**

The main applications of the study results going forward are the continued need to protect the elderly and patients with other underlying diseases from [severe disease](#) outcomes through vaccination against COVID-19, even though new virus variants may appear less virulent. The results are also important for understanding trends in mortality in hospitalized patients with COVID-19 and thus planning for resource use in hospital care.

Larger multinational collaborative projects like this are of great value to increase the generalizability of studies and not least to promote international collaboration also for future pandemic or epidemic scenarios.

**More information:** Pontus Hedberg et al, In-hospital mortality during the wild-type, alpha, delta, and omicron SARS-CoV-2 waves: a multinational cohort study in the EuCARE project, *The Lancet Regional Health—Europe* (2024). [DOI: 10.1016/j.lanepe.2024.100855](https://doi.org/10.1016/j.lanepe.2024.100855)

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