

Vaccinated patients less likely to need critical care during omicron surge

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The highly contagious omicron variant of SARS-CoV-2 became the dominant strain in the United States in mid-December 2021, coinciding with a rise in hospitalizations of patients with COVID-19. Among those

admitted during the omicron surge, vaccinated adults had less severe illness compared with unvaccinated adults and were less likely to land in intensive care, according to a new study by Cedars-Sinai and the Centers for Disease Control and Prevention (CDC).

"Overall, the omicron-period group had a lower likelihood of being admitted to the [intensive care](#) unit (ICU) and were also less likely to require invasive mechanical ventilation compared with the delta-period group," said Matthew Modes, MD, a pulmonologist at Cedars-Sinai and co-first author of the paper.

Investigators also found that during the omicron period fewer patients died while hospitalized (4.0%), compared with those admitted when the delta variant was dominant (8.3%).

In a single-hospital study published in the CDC's [Morbidity and Mortality Weekly Report](#), scientists looked at the characteristics of 339 patients hospitalized with COVID-19 at Cedars-Sinai Medical Center in Los Angeles, from July to September of 2021, when the delta variant of SARS-CoV-2 was dominant. They compared that group with 737 patients admitted with COVID-19 during December 2021-January 2022, when the omicron variant was most prevalent.

Clinical information was gathered from the electronic health records of the patients in the study and then analyzed by a team of investigators led by Sharon Isonaka, MD, MS, chief value officer and vice president for Clinical Efficiency and Value at Cedars-Sinai.

The analysis revealed that a greater portion of the patients hospitalized during omicron were vaccinated as compared to patients hospitalized during the summer of 2021 when the delta variant predominated, likely reflecting the higher percentage of the populations that were vaccinated during omicron.

"In addition to the protection that vaccination offered people admitted to the hospital when omicron dominated, we saw that the addition of a booster dose appeared to be particularly important in reducing the severity of illness, especially among older adults," said Peter Chen, MD, senior author of the study and director of Pulmonary and Critical Care Medicine at Cedars-Sinai.

"Unvaccinated patients hospitalized with COVID-19 during the omicron [variant](#) dominance still had a higher chance of being admitted with serious complications and appeared to be at higher risk for the development of respiratory failure, compared with vaccinated patients," said Chen, who holds the Medallion Chair in Molecular Medicine and is a professor of Medicine and Biomedical Sciences.

Large numbers of hospitalizations during the pandemic have strained health systems throughout the country. Vaccination, including a booster dose for those who are fully vaccinated, remains critical for mitigating the risk of [severe illness](#) associated with SARS-CoV-2 infection.

"A clear pattern emerges if you take just the [omicron](#)-period patients and compare their vaccination status against the percentage of them who ended up in the ICU. The more vaccinated someone is—from unvaccinated, partially vaccinated, fully vaccinated without a booster dose to fully vaccinated with a booster dose—the better the outcome for the patient," said Michael Melgar, MD, a co-first author of the study and a medical officer with the CDC.

More information: Matthew E Modes et al, Clinical Characteristics and Outcomes Among Adults Hospitalized with Laboratory-Confirmed SARS-CoV-2 Infection During Periods of B.1.617.2 (Delta) and B.1.1.529 (Omicron) Variant Predominance—One Hospital, California, July 15–September 23, 2021, and December 21, 2021–January 27, 2022, *MMWR. Morbidity and Mortality Weekly Report* (2022). [DOI:](#)

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