

Researchers publish most comprehensive study yet of COVID-19 hospital mortality

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A new study of hospital deaths in the United States, published today in *JAMA Network Open*, is the most comprehensive look yet at changes in hospital mortality during the pandemic. Researchers analyzed data on more than 20,000 patients admitted to hospitals for COVID-19, over nine full months, from March to November of 2020. They found that rates of in-hospital mortality among COVID patients fell 38% between March and May, but there was little further decline through November 2020.

The researchers aimed to uncover the most likely cause of the observed trend by controlling for patient age, sex, comorbidities, and severity of disease when the patient was admitted. However, they found that none of these factors fully explained the decline in [mortality rates](#).

"Understanding why mortality rates changed is important for clinicians working to improve outcomes for patients hospitalized with COVID-19," said Dr. Gregory Roth, the study's lead author and an Associate Professor of Medicine at the Institute for Health Metrics and

Evaluation at the University of Washington. "Further analysis is needed to understand the drivers more precisely, but it speaks to a crucial need for information sharing and identifying [hospital](#) best practices that can prevent mortality rates from increasing again, particularly during possible future waves of COVID-19 infections."

The researchers analyzed records from the American Heart Association's COVID-19 Cardiovascular Disease Registry, including 107 hospitals in 31 states. Mortality rates for patients in the registry were 19.1% in March and April, 11.9% in May and June, 11% in July and August, and 10.8% from September through November. Almost one-third of patients were admitted to intensive care, and 1 in 5 were placed on mechanical ventilation.

The study found that there were only small changes in patient characteristics during the observed period, including a small decrease in age, increase in proportion of women, and increase in BMI.

"Our findings suggest that the decline in [mortality](#) could be due to overloaded hospitals and changes in treatment," Roth explained. "With more variants circulating and many countries still struggling with overloaded hospitals and scarce resources, the more we know about this the better."

The American Heart Association's COVID-19 CVD patient data registry was launched within months of the beginning of the COVID-19 pandemic in 2020, to provide insights to care and adverse cardiovascular outcomes. James de Lemos, MD, volunteer co-chair of the steering committee for the registry and professor of medicine and the Sweetheart Ball-Kern Wildenthal distinguished chair in Cardiology at the University of Texas Southwestern Medical Center in Dallas, who co-lead the steering committee of Association volunteers to establish the registry, said, "The findings such as the ones from this study reflect the importance and

value of collecting this rapidly growing dataset to conduct multiple analyses and research projects in a much shorter period of time."

More information: Gregory A. Roth et al, Trends in Patient Characteristics and COVID-19 In-Hospital Mortality in the United States During the COVID-19 Pandemic, *JAMA Network Open* (2021).
[DOI: 10.1001/jamanetworkopen.2021.8828](https://doi.org/10.1001/jamanetworkopen.2021.8828)

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