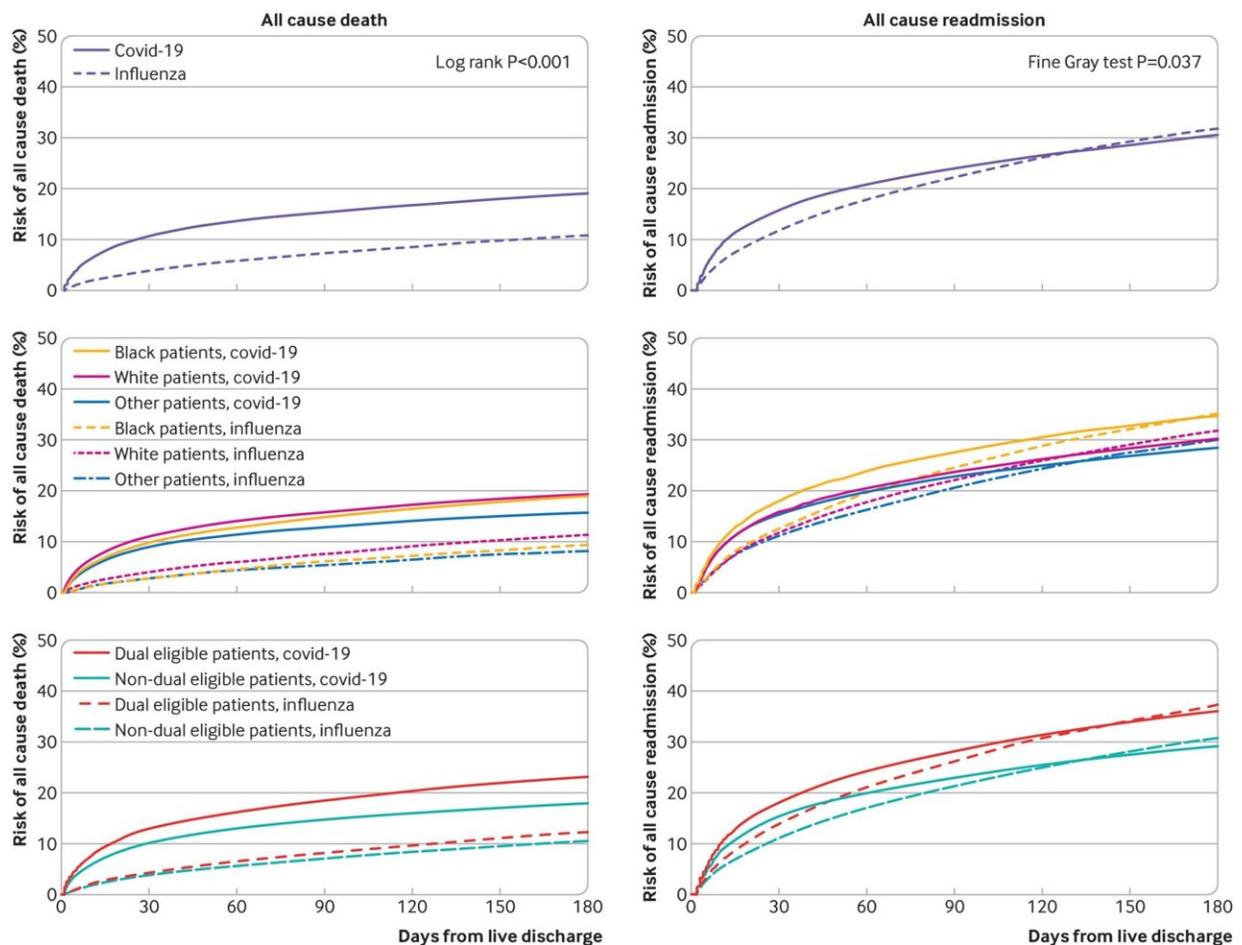


Patients hospitalized with COVID-19 found to face nearly twice the rates of death after discharge as patients with flu

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Risk of all cause death and readmission after live discharge from covid-19 and Influenza related hospital admission. Credit: *BMJ* (2023). DOI: 10.1136/bmj-2023-076222

As of June 2023, more than 1.1 million Americans have died of COVID-19. Adults older than 65—who make up just 16 percent of the population—account for more than 75 percent of U.S. COVID-19 deaths and were hospitalized at three times the rate of younger people, highlighting the heightened vulnerability of this population.

In a new study, researchers from the Richard A. and Susan F. Smith Center for Outcomes Research at Beth Israel Deaconess Medical Center (BIDMC) used national Medicare data to characterize the long-term risk of death and hospital readmission after being hospitalized with COVID-19 among beneficiaries 65 years and older.

The study, which appears in the *BMJ*, demonstrates that among individuals who were admitted to the hospital with COVID-19 and were discharged alive, the risk of post-discharge death was nearly twice that observed in those who were discharged alive from an influenza-related hospital admission.

"Since the early days of the pandemic, it has been evident that [older adults](#) bear a disproportionate burden of COVID-19 and our study provides several important insights into the longer-term clinical consequences of the disease in this vulnerable population," said co-senior author Dhruv S. Kazi, MD, MSc, MS, associate director of the Smith Center and director of the Cardiac Critical Care Unit at BIDMC.

"We know that [patients](#) who require hospital admission for COVID-19 have more comorbidities, more severe initial disease and worse short-term outcomes compared with patients who are asymptomatic or mildly symptomatic, and they may be more vulnerable to late complications of infection. Our goal was to better understand long-term outcomes after patients are discharged from the hospital so as to help tailor support strategies and guide resource allocation for future surges of COVID-19 or during future pandemics."

The research, led by Smith Center investigators, compared outcomes for more than one million Medicare beneficiaries admitted to the hospital with COVID-19 between March 2020 and August 2022 and a historical cohort of nearly 58,000 Medicare beneficiaries admitted to the hospital for influenza between March 2018 and August 2019.

The physician-researchers observed that patients hospitalized for COVID-19 had a higher in-hospital mortality compared with the influenza cohort (17% vs. 3%), but this increased risk of death after COVID-19 hospitalization persisted at 30 days, 90 days, and 180 days after discharge. The greatest difference in risk between the two groups being concentrated in the first 30 days after discharge.

Within the COVID-19 cohort, significant differences were found in the 180-day risk of post discharge, death by race and socioeconomic status. Individuals enrolled in both Medicaid and Medicare had higher risk of death. Black patients had a higher risk of death or rehospitalization compared with white patients, largely driven by an increased risk of rehospitalization. In contrast, the risk of death was slightly lower in Black patients compared with white patients.

"Individuals with low income and those from racial/ethnic minority populations have been shown to be at increased risk for adverse events associated with acute COVID-19, including higher rates of infection, hospital admissions and in-hospital death," said co-senior author Robert W. Yeh, MD, MSc, director of the Smith Center for Outcomes Research at BIDMC. "We found that many of these inequalities persist among a cohort of patients who were discharged alive after COVID-19-related hospital admissions."

The COVID-19 cohort also experienced a higher risk of [hospital readmission](#) at 30 days, and 90 days compared to the flu patients; however, by 180 days, the rate of readmissions were similar between the

two groups. The most common reasons for readmission were circulatory conditions, respiratory conditions, sepsis, heart failure and pneumonia. Within the COVID-19 cohort, Black individuals and dual-eligible beneficiaries were more likely to be readmitted than white patients.

Encouragingly, the scientists demonstrated a decline in post-discharge death over the course of the study period.

The scientists note that there may be several epidemiological factors that explain this trend: clinicians have made major advances in treating patients hospitalized with severe cases of COVID-19, that vaccination campaigns targeting high-risk patient populations including older adults may have prevented many infections from becoming severe and potentially fatal cases of COVID-19, and that the virus itself may be undergoing changes in virulence.

"While we did find that rates of death following a hospitalization for COVID-19 steadily declined over the course of the pandemic, the substantial in-[hospital](#) and early post-discharge risk of [death](#) associated with COVID-19 in this sample of Medicare beneficiaries highlights the need for preventative interventions, particularly in patients at increased long-term risk for adverse outcomes," said lead author Andrew S Oseran, MD, MBA, a research fellow at the Smith Center now at Massachusetts General Hospital.

"Our findings suggest the continued need to evaluate clinical and societal interventions that address the glaring inequities in post-discharge outcomes among older adults hospitalized with COVID-19."

More information: Andrew S Oseran et al, Long term risk of death and readmission after hospital admission with covid-19 among older adults: retrospective cohort study, *BMJ* (2023). [DOI: 10.1136/bmj-2023-076222](https://doi.org/10.1136/bmj-2023-076222) ,

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