

# COVID-19 patient outcomes affected by cardiovascular risk

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3D print of a spike protein of SARS-CoV-2, the virus that causes COVID-19—in front of a 3D print of a SARS-CoV-2 virus particle. The spike protein (foreground) enables the virus to enter and infect human cells. On the virus model, the virus surface (blue) is covered with spike proteins (red) that enable the virus to enter and infect human cells. Credit: NIH

Research presented today by UT Southwestern cardiologists at the annual American Heart Association (AHA) Scientific Sessions 2020 showed that Black and Hispanic people were more likely to be hospitalized with COVID-19 than white patients, and that nonwhite men with cardiovascular disease or risk factors were more likely to die.

In one of the conference's late-breaking research sessions, James de Lemos, M.D., a professor of internal medicine who holds a distinguished chair in cardiology at UTSW, discussed COVID-19 Cardiovascular Disease Registry: Design, Implementation, and Initial Results.

The American Heart Association COVID-19 Cardiovascular Disease Registry was created by volunteers and AHA staff and launched in the spring at the outset of the pandemic. To date, the registry has gathered records on more than 22,500 patients from 109 U.S. health care centers in 34 states, including [data points](#) on patient demographics, cardiovascular [risk factors](#), comorbidities, medications prior to admission, treatments during hospitalization, [disease](#) severity measures, and laboratory results.

In a related study, Racial and Ethnic Differences in Treatment and Outcomes for Patients Hospitalized with COVID-19: Findings from the American Heart Association COVID-19 Cardiovascular Disease Registry, deLemos and his team studied 8,000 COVID-19 patients who were hospitalized from Jan. 17 to July 22. This group was treated at 88 hospitals. One-third were Hispanic, 25.5 percent were non-Hispanic Black, 6.3 percent were Asian, and 35.2 percent were non-Hispanic white. Black patients were younger with higher rates of obesity, high blood pressure, and diabetes, and were also more likely to require a ventilator or kidney dialysis than [white patients](#).

"The results highlight the disproportionate burden of COVID-19 among Black and Hispanic patients, and imply there are factors in the U.S. that

existed prior to hospitalization that are driving these disparities in COVID hospitalization and death," says de Lemos, who served as co-chair of the steering committee for the registry.

In another late-breaking session, Ann Marie Navar, M.D., Ph.D., reported that a review of nearly 20,000 patients revealed that [cardiovascular disease](#) or CVD risk factors in COVID-19 patients dramatically increased the risk of in-hospital mortality. The risk of death was particularly high for older, nonwhite men.

Navar's research team studied [electronic health records](#) from 54 health systems that use a COVID-19 database provided by Cerner, a health information technology firm. The results, measured from January to May and shared in "Impact of Cardiovascular Disease on Outcomes Among Hospitalized COVID-19 Patients: Results From >14,000 Patients Across the U.S.," showed that in-hospital mortality ranged from 28.5 percent for patients with hypertension to 28.6 percent for those with diabetes, 25.5 percent for those with coronary artery disease, and 38.4 percent for those with heart failure.

Just 1.5 percent of the patients had a stroke while hospitalized for COVID-19, but the mortality rate was 56 percent among this group. Similarly, 5 percent of patients had a heart attack, and 55.5 percent of these individuals died during their hospital stay.

"These data reflect what doctors and nurses on the front lines in hospitals across the U.S. are actually seeing, where more than 1 in 15 patients hospitalized with COVID-19 does not make it home," says Navar. She conducted the research at the Duke Clinical Research Institute before joining UT Southwestern as an associate professor of internal medicine and population and data sciences.

Provided by UT Southwestern Medical Center

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