

## Your longevity after a heart attack may depend on where you live

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Black patients from disadvantaged neighborhoods were significantly more likely to die within five years of surviving a heart attack compared with Black heart attack patients from wealthier neighborhoods and white patients of any socioeconomic means who survive a heart attack, according to a study being presented at the American College of Cardiology's 70th Annual Scientific Session.

The researchers analyzed data from nearly 32,000 patients with health insurance treated for a heart attack within the Kaiser Permanente Southern California hospital system between 2006-2016. The researchers assigned each patient a neighborhood disadvantage score based on their home address using the Area Deprivation Index, a validated index for assessing neighborhood disadvantage based on 17 variables reflecting education, income, employment and household characteristics.

According to the researchers, the study underscores the influence of a person's environment on their health and suggests that a

greater focus on addressing social disadvantages and poverty could help improve outcomes.

"A key takeaway from our study is that there are a lot of social and environmental factors that can affect a person's outcome after a heart attack," said Jesse Goitia, MD, a cardiovascular fellow at Kaiser Permanente Los Angeles Medical Center and the study's lead author. "I think that a broad, overarching approach to start addressing those factors at the neighborhood level would pay dividends for businesses, health insurers, providers and patients."

About 20,000 patients were scored in the top 25th percentile, representing well-resourced neighborhoods, and about 12,000 were scored in the bottom 75th percentile, representing disadvantaged neighborhoods. Based on an average of five years of follow-up data, the results revealed that people living in disadvantaged neighborhoods were 5% more likely to die of any cause within five years after their heart attack.

The research also revealed significant differences by race, which seemed to be mediated by neighborhood quality. Black patients from well-resourced neighborhoods had outcomes similar to white patients from well-resourced neighborhoods. However, Black patients from disadvantaged neighborhoods were 19% more likely to die than white patients from well-resourced neighborhoods and 14% more likely to die than white patients from disadvantaged neighborhoods. There was no significant difference in the likelihood of death between white patients from well-resourced neighborhoods and white patients from disadvantaged neighborhoods.

In addition to the study's implications for addressing social determinants of health, Goitia said the research can help inform how clinicians care for patients at the individual level.



"Recognizing where a patient is coming from can help providers think more about their approach to follow-up care and how to best arrange that," Goitia said. For example, if transportation to the clinic poses challenges for a patient, more frequent check-ins by phone might be preferable to inperson clinic visits when feasible, he said.

Goitia said the trends observed in the study would likely be similar or even more pronounced in other parts of the country. Because the data came from hospitals with an integrated care delivery model, patients from all <a href="neighborhoods">neighborhoods</a> had equal access to primary and specialty care. The disparities might be even starker in places where access to insurance varies by neighborhood.

One limitation of the study was that it excluded patients without a permanent address. The researchers plan to continue their analysis to determine whether specific elements of the 17-factor neighborhood quality score are more closely tied to a patient's risk and identify interventions to target those factors.

The 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease recommends clinicians should evaluate the social determinants of health that affect individuals to inform treatment decisions.

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