

Counting patients social determinants of health may help doctors avert fatal heart attacks

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Doctors may be able to predict their patients' risks of fatal coronary heart disease more accurately by taking into account the number of

adverse social factors affecting them, according to a new study led by researchers at Weill Cornell Medicine and NewYork-Presbyterian.

The researchers, whose findings appear Dec. 3 in *Circulation*, analyzed data from the Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study that tracked cardiovascular-related [health](#) outcomes in more than 20,000 people for a decade. The new analysis showed that participants who had more adverse social determinants of health, such as low income and educational attainment, were significantly more likely to die of coronary heart disease—mostly heart attacks—during the study. For example, people with three or more social determinants of health, on a list of seven, were about 67 percent more likely to have a fatal [heart attack](#), even when accounting for differences in age and other health factors.

The researchers suggest that doctors consider using simple counts of these factors to better estimate their patients' [health risks](#) and provide more aggressive treatment where applicable.

"Physicians tend to view social determinants of health as a peripheral part of clinical care management, but we think it should play a much more central role," said lead author Dr. Monika Safford, John J. Kuiper Professor of Medicine at Weill Cornell Medicine and chief of the Division of General Internal Medicine at Weill Cornell Medicine and NewYork-Presbyterian/Weill Cornell Medical Center.

Social determinants of health have remained on the periphery of medicine, despite their potential for improving patient risk assessment, largely because no one has demonstrated an easy way to use them in day-to-day clinical practice.

"Physicians tend to be very busy people—they're unlikely to adopt a complex tool for risk assessment," Dr. Safford said. "Our approach

therefore was to keep it simple."

The analysis covered more than 22,000 people, who initially did not have diagnosed coronary heart disease, in the long-running REGARDS Study, on which Dr. Safford has been a lead investigator. The stroke-focused study has included ancillary studies of heart attacks and related health outcomes.

Dr. Safford and her colleagues identified a list of nine social determinants of health that prior research has linked individually to greater risks of heart attacks, strokes and related outcomes. They found that about half (48.8 percent) of those in the study group had two or more of these adverse social factors, and that having more of them generally predicted worse coronary heart disease outcomes during the study period. Participants with three or more social determinants were, for example, about three times more likely to suffer fatal coronary heart disease, compared to those with none of these factors.

These initial findings suggested that a count of social determinants of health could be a quick and easy source of information for doctors about their patients' coronary heart disease risks—even if it is only predictive because the factors are linked to known cardiovascular risk factors such as hypertension and obesity. However, a further analysis suggested that a high count also contains an independent signal of fatal-coronary heart disease risk.

The researchers narrowed their social determinants of health list to the seven that were most strongly linked to fatal coronary heart disease: Black race, low education, low income, living in a zip code with high poverty, residence in one of the U.S. states with the least public health infrastructure, not seeing close friends/family in the past month, and lack of health insurance. They then adjusted the outcomes data based on differences in health factors, such as a greater burden of chronic disease

in the high social determinants group. They still found that people with three or more social determinants had a 67 percent greater risk of fatal [coronary heart disease](#).

A similar analysis found that people with two or more social determinants had a 14 percent greater risk of nonfatal heart attack, although that association was not statistically significant.

Noting a patient's high number of social determinants of health could enable a cardiologist or general practitioner not only to anticipate a higher chance of bad outcomes, but also to mitigate that added risk with more intensive treatment, Dr. Safford said.

"Our group has also done studies on social determinants of health and the risks of stroke, diabetes, and [heart](#) failure, and we've had similar findings in every case, so we may be close to the point where counting social determinants of health is generally adopted into clinical practice," she said.

More information: Monika M. Safford et al. Number of Social Determinants of Health and Fatal and Nonfatal Incident Coronary Heart Disease in the REGARDS Study, *Circulation* (2020). [DOI: 10.1161/CIRCULATIONAHA.120.048026](#)

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