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Cardiologists' effectiveness varies widely by region, research suggests

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Data suggest substantial regional variation in the quality of cardiologists when treating patients with myocardial infarction (MI), with patients living in the North East and East of England regions receiving worse care on average than patients living in other areas.

Research by the Institute for Fiscal Studies suggests that, among 100 otherwise identical patients, an additional four patients living in the North East and an additional two patients living in the East of England would have survived for at least a year if they had instead been treated by a cardiologist with the average effectiveness of a cardiologist treating patients in London.¹

The researchers used anonymised records of more than half a million patients in England from 2005 to 2018 to estimate the causal effect that each consultant cardiologist had on the probability that an individual patient with MI would survive for at least a year after being admitted to hospital. The effectiveness of each consultant was calculated by comparing their patients' survival rates with those of patients treated by all other consultants working in the same hospital, after adjusting for patient characteristics such as age, sex, and existing health conditions that might affect survival.

On average, 14 in every 100 patients died within a year of receiving emergency treatment for MI by a cardiologist in an NHS hospital, said the researchers, whose work was funded by the Economic and Social Research Council. They found that cardiologists treating patients in London and the South East achieved the best survival rates among these patients, after accounting for the characteristics of their patients and the hospitals they worked in.

An average of 330 MI deaths a year occur in the North East of England and around 550 in the East of England. The working paper says that more than 80 of these patients could be saved in both regions if the average cardiologist's effectiveness in these regions was raised to the same level as that in London.

Equal needs

The research also revealed a divide between rural and urban areas of England, as patients living in rural areas typically received treatment from a less effective cardiologist than those living in more urban areas. In every 100 patients living in a rural area, an additional patient would have survived if treated by a cardiologist with the same average effectiveness as one who treated patients in the most affluent urban areas, the researchers calculated.

But considerable variation was found in the effectiveness of cardiologists in treating patients with MI, even within the same hospital. A patient who was treated by a cardiologist ranked at the 90th centile

of effectiveness was 8.5 percentage points more likely to survive for a year after their MI than an identical patient treated by a cardiologist ranked at the 10th centile. This means that, for every 100 patients these doctors treated, the doctor at the 90th centile would have an additional nine patients survive for at least a year, all else being equal.

Unsurprisingly, cardiologists with more experience in treating patients with MI achieved higher survival rates. Treating an additional 150 such patients over the three previous years was associated with one death fewer among every 100 patients treated in a given year.

George Stoye, study author and an associate director at the Institute for Fiscal Studies, said, "A key tenet of the NHS is to provide equal access to care for those with equal needs. However, this research shows that patients living in different parts of the country do not have access to the same quality of care. Cardiologists treating otherwise identical patients achieve very different survival outcomes, and cardiologists of equal skill are not evenly spread around the country.

"Hiring and training doctors takes time, but the research shows that it is important that policy makers invest in carefully monitoring quality, to ensure that best practice is widely spread, and take other steps to ensure equal access to high quality care across the country."

Commenting on the research, Charmaine Griffiths, chief executive of the British Heart Foundation, said, "Sadly, this analysis shows that heart patients experience a great deal of variation depending on which part of the country they live in. We know that this is driven by a range of factors including travel time to hospital in rural areas, what equipment is available within a hospital, and the number of doctors and nurses in a particular area.

"Government must ensure that there are enough heart doctors and nurses who have the tools they need to provide patients with the best care, wherever they are."

¹ Institute for Fiscal Studies. The distribution of doctor quality: evidence from cardiologists in England. Aug 2022. <https://ifs.org.uk/publications/16143>