

# Large data analysis suggests striking inequalities in provision of life-saving heart valve replacement in England

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There are striking inequalities in the provision of major (aortic) heart valve replacement surgery across England, with women, Black and Asian

people, and those living in areas of deprivation much less likely to receive the life-saving procedure, suggests a large data analysis, published in the open access journal *Open Heart*.

Public health initiatives to understand and tackle these inequalities should be prioritized, say the researchers.

The [aortic valve](#) keeps blood flowing from the heart's lower left chamber (left ventricle) to the aorta—the [main artery](#) bringing blood from the heart to the body. Aortic stenosis occurs when the aortic valve narrows as a result of calcium build-up, impeding normal blood flow. This causes shortness of breath, light headedness, and chest pain (angina).

Aortic valve replacement (AVR) not only relieves these symptoms, but increases [life expectancy](#), and improves quality of life, say the researchers, adding that up to one in four of those with severe or very severe [aortic stenosis](#) will die within five years without AVR.

Not much is known about how inclusive AVR provision is across the NHS in England, however. To find out, the researchers analyzed data from Hospital Episode Statistics for England spanning the period April 2016 to end of March 2019.

During this time, 183,591 adults with aortic stenosis were identified, 31,436 of whom underwent AVR.

Women with aortic stenosis were 30% less likely to undergo AVR than men, while people of Black and South Asian ethnicities were, respectively, 26% and 22% less likely to do so than people of white ethnicities.

Similarly, people from the most deprived areas were 24% less likely to undergo the procedure than those in the least deprived.

The researchers then linked these data with [general practice medical records](#) in the nationally representative Clinical Practice Research Database (CPRD) to see who had received timely AVR.

Timely intervention was regarded as that performed during a scheduled admission and without evidence of heart failure on or before AVR; intervention was regarded as delayed if performed during unscheduled/urgent admission or with evidence of heart failure on or before AVR.

While there were no obvious differences by gender, there were racial and socioeconomic differences.

Timely AVR occurred in around two thirds (65%) of those of white ethnicities compared with just over half (55%) of those of Black and South Asian ethnicities. And around two thirds (68%) of those from the least deprived areas had a timely procedure compared with 58% of the most deprived.

Delayed AVR occurred in a higher proportion of people of Black (32%) or South Asian (36%) than white ethnicities (28%), and in a third of those living in areas of greatest deprivation compared with around one in four (26%) of those from areas of least deprivation.

This is an [observational study](#), and as such, can't establish cause, nor was it designed to identify barriers to access or provision of care, note the researchers.

"Further research is needed to investigate the reasons for under provision of AVR in certain person groups and to identify whether disparity is related to structural or systemic inequities, genetic inequalities, or differences in patient behaviors or preferences," they say.

"Public health initiatives may be required to increase clinician and public awareness of unconscious biases towards minority and vulnerable populations to ensure timely AVR for everyone," they add.

**More information:** Impact of gender, ethnicity and social deprivation on access to surgical or transcatheter aortic valve replacement in aortic stenosis: a retrospective database study in England, *Open Heart* (2023). DOI: [10.1136/openhrt-2023-002373](https://doi.org/10.1136/openhrt-2023-002373)

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