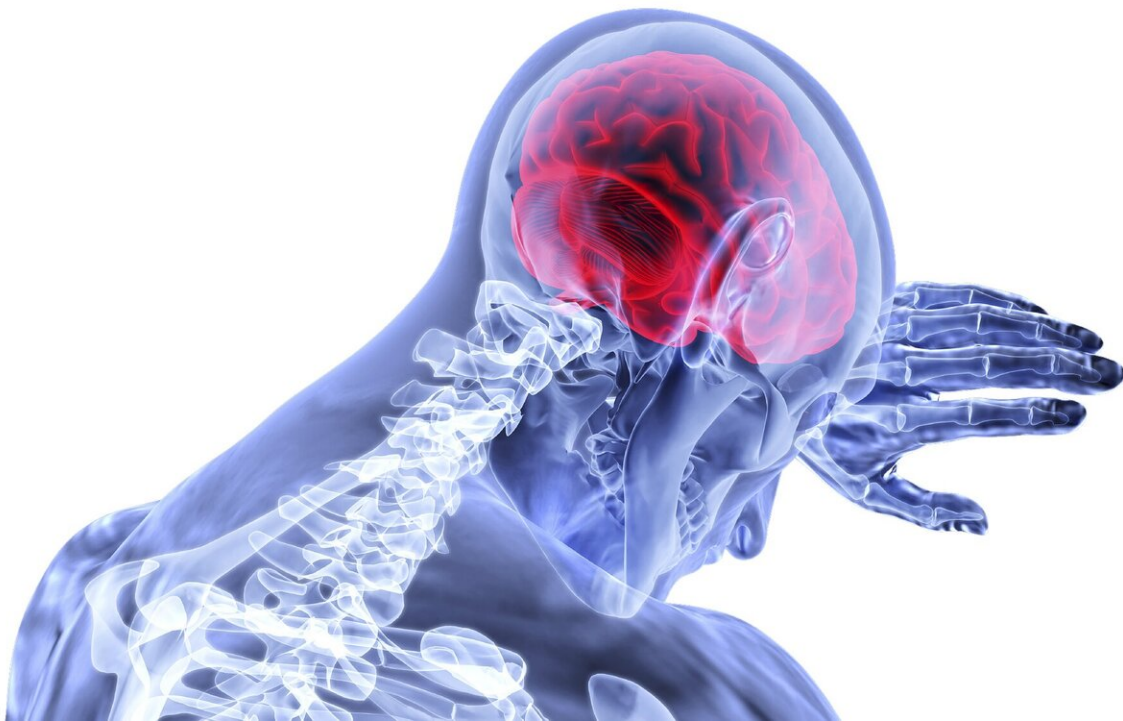


# Half as many atrial fibrillation patients dying of heart attacks and strokes in the UK

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Patients living with one of the UK's most common heart rhythm conditions are 50% less likely to die from a heart attack or stroke than they were at the start of the millennium, new research has found.

Analysis of the health records of more than 70,000 patients newly

diagnosed with [atrial fibrillation](#) (AF) showed that mortality from related cardiovascular and [cerebrovascular diseases](#) more than halved over the 16-year study period.

AF is associated with an increased risk of stroke.

The research showed that dementia now accounts for more deaths within one year of an AF diagnosis than acute stroke, [heart attack](#) and heart failure combined, demonstrating the need for more research into the link between dementia and AF.

The study team believe the lower mortality rate can be attributed to better detection and treatment for AF, which, [according to the British Heart Foundation, affects more than 1.5 million people in the UK.](#)

But the findings reveal significant health inequalities, showing that the most socioeconomically deprived patients were 22% more likely to die from AF-related conditions than people from the most affluent group.

Additionally, patients are now more likely to be diagnosed with coexisting [health conditions](#) such as diabetes, cancer and [chronic kidney disease](#), which have greater health implications for them than AF.

Senior author Chris Gale, Professor of Cardiovascular Medicine, Honorary Consultant Cardiologist, and Co-Director of the Leeds Institute for Data Analytics at the University of Leeds said, "Atrial fibrillation is a common and often undetected heart rhythm disorder that increases the risk of stroke. Advances in health care have now reduced the chance of having a stroke related to AF, and from dying as result of it, if AF is detected and treated.

"However, our study also reveals important disparities in care associated with deprivation and the co-existence of other illnesses. Proactively

diagnosing and treating AF in these groups will likely further reduce death and disability from [cardiovascular disease](#). Equally, for many people, AF is a marker of co-existent disease—identifying and treating these additional disease states could further improve outcome for people with AF."

The team is now calling for randomized [clinical trials](#) to determine whether the earlier identification and treatment of AF and associated co-morbidities could effectively improve cardiovascular health.

## Data analysis

The research examined data from electronic health records of 72,412 patients from a representative sample of the UK population, who had been diagnosed with AF between 2001 and 2017. The team assessed the health outcomes in patients in the first year after their AF diagnosis, and analyzed changes in cause-specific mortality and hospitalization over time and by sex, age, socioeconomic status and diagnostic care setting.

The average patient was aged 75.6. Some 48.2% of patients were women, and 61.8% had three or more comorbidities.

Over the study period, coexisting health concerns became more common, with almost 70% of newly diagnosed AF patients also having at least three comorbidities.

Mortality rates at one year post diagnosis were investigated, as well as the number of hospital admissions with an overnight stay within 1 year of diagnosis.

Over the study period, 20% of patients died from any cause within a year of being diagnosed with AF—but this declined over time.

However the researchers found that deaths due to cardiovascular and cerebrovascular events (strokes) more than halved over the study period. Cardiovascular deaths declined from 7.3% in 2001/02 to 3% in 2016/2017, while cerebrovascular deaths declined from 2.6% to 1.1%.

The researchers say that the lower rates of cardiovascular deaths among AF patients in the study may be partly explained by improvements in strategies to prevent heart disease, and by changes in clinical practice that could lead to people being diagnosed earlier.

By contrast, there was an increase in mortality rates from mental and neurological disorders, from 2.5% in 2001/02 to 10.1% in 2016/17. Of these deaths, 87.2% were caused by dementia, Alzheimer's disease and Parkinson's disease. The research team say that while this could be partly due to greater awareness of dementia, it also strengthens the evidence that the relationship between AF and dementia is a pressing research priority.

Other findings include:

- Hospitalization is common within a year of AF diagnosis, with almost two further admissions experienced by patients
- Hospitalization rates have increased by 17% due to increasing admissions from non-cardio/cerebrovascular causes, especially in older patients
- Hospitalization for cardiovascular and cerebrovascular causes have decreased by 38% and 28%, respectively, but for non-cardio/cerebrovascular causes hospitalization has increased by 42%
- Older people have experienced the greatest rise in hospitalization, with those aged 80 years or more experiencing a 39% rise in hospitalization within a year of AF diagnosis

## Health inequalities

Professor Gale said, "Patients diagnosed in hospital or from the most deprived group had worse outcomes compared with those diagnosed in the community or from the most affluent group."

"Although increased burden of comorbidities might partly explain the increased frequency of death in these groups, the persisting difference after full adjustment for these factors suggests other social and health-care factors might also contribute."

"Our previous research showed that the most deprived individuals in the UK experience an AF diagnosis at a younger age than the most affluent individuals. This discrepancy in outcomes warrants targeted strategies and health care resource planning."

Lead author Jianhua Wu, Professor of Biostatistics and Health Data Science in the Queen Mary University of London's Wolfson Institute of Population Health said, "AF is one of the most prevalent heart conditions in the UK and as such it is crucial that we understand whether or not the current management of the condition is successful."

"Our findings provide vital evidence about the effectiveness of treatments for this condition, while also showing that other conditions are becoming more prevalent among AF patients—potentially providing avenues for exploration of more targeted treatments."

The research is published in *European Heart Journal*.

**More information:** Jianhua Wu et al, Temporal trends of cause-specific mortality after diagnosis of atrial fibrillation, *European Heart Journal* (2023). [DOI: 10.1093/eurheartj/ehad571](https://doi.org/10.1093/eurheartj/ehad571)

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