

'Modest' increase in heart attack hospitalization rates after years of decline

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The burden of hospital admission rates due to heart attacks (myocardial infarctions) in England rose between 2012 and 2016, despite decades of falling rates, suggests new research published in the *Journal of*

Epidemiology & Community Health.

Researchers also found that after 2010-2011, rates increased in most age groups and [young women](#) aged 35 to 49 and even [younger men](#) aged 15 to 34 were the groups that showed the sharpest increases in hospitalization rates for heart attacks in the last five years of the study.

Death rates from coronary heart disease and heart attacks have been declining in England and other countries since the 1980s. Despite this, [coronary heart disease](#) is still a large cause of illness and costs the NHS in England more than £950 million annually.

In other countries, [hospital](#) admission rates for heart attacks have also fallen since the 1980s, but little is known about these long-term admission rates in England in terms of the age and sex of the patients involved.

Therefore an international team of researchers led by Dr. Lucy Wright from University of Oxford's Nuffield Department of Population Health and Big Data Institute set out to analyse the timing and scale of changes in rates of hospitalized myocardial infarction in England by age and sex over the past five decades.

They used official electronic hospital data for adults aged 15 to 84 between 1968 and 2016 and included 3.5 million hospital admissions for heart attacks in their analysis.

Of these admissions, around two thirds (68%) were male. About half (48%) of the admissions in men and 71% in [women](#) were for people aged 65 years or older.

Rates of hospital admissions increased in the early years of the study in both men and women, peaked in the mid-1980s (355 per 100,000

population in men and 127 per 100,000 in women) and declined by 38.8% in men and 37.4% in women from 1990 to 2011.

However, from 2012, there were "modest increases" in admissions for both sexes.

Analysis showed that long-term trends in rates over the study period varied by age and sex, with those aged 70 years and older having the greatest and most sustained increases in the early years (1968-1985).

During subsequent years, rates fell in most age groups until 2010-2011. The exception was younger women (35-49 years) and men (15-34 years) who experienced significant increases from the mid-1990s to 2007 (a range of 2.1% per year increase to 4.7% per year increase).

From 2012 onwards, rates increased in all [age groups](#) except the oldest, with the most marked increases in men aged 15-34 years (7.2% per year) and women aged 40-49 (6.9%-7.3% per year).

The authors said a possible explanation for the rise in admissions was that a more sensitive diagnostic test was introduced in English hospitals around that time, which identified less severe [heart](#) attacks.

However, this is an observational study, and as such, can't establish cause. The study had some limitations, said the authors, such as not being able to identify changes in hospital [admission](#) rates that were due to changes in patients' healthcare-seeking behavior and referral practices.

Nevertheless, the study used a large dataset, which they argued allowed the detailed examination of rates by sex and age of the hospitalized [heart attack](#) patients over five decades.

They conclude: "Despite substantial declines in [hospital admission rates](#) for myocardial infarction in England since 1990, the burden of annual admissions remains high. Continued surveillance of trends and coronary disease preventive strategies are warranted."

The authors added: "The rise in myocardial infarction hospitalization rates in younger women and men is of concern and has implications for clinicians and policy makers. Primary prevention guidelines and public awareness campaigns should continue to include the message that coronary disease is not just a disease of men and the elderly."

More information: Long-term trends in population-based hospitalisation rates for myocardial infarction in England: a national database study of 3.5 million admissions, 1968-2016. *Journal of Epidemiology & Community Health*, [DOI: 10.1136/jech-2021-216689](https://doi.org/10.1136/jech-2021-216689)

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