Women over 65 face higher mortality rates at low quality hospitals after heart surgery

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Women over the age of 65 who require complex heart surgery are more likely than men to receive care at low quality hospitals—where they also die in greater numbers following the procedure, a Michigan Medicine study finds.

The research, published in *JAMA Network Open*, covered nearly 450,000 Medicare beneficiaries who underwent coronary artery bypass grafting, or heart bypass surgery, between late 2015 and early 2020.
Compared to men, women were 1.26 times more likely to be treated at low quality hospitals, meaning facilities with the highest 30-day mortality rates.

At those low quality hospitals, women died in 7% of overall cases while men died nearly 5% of the time. The sex disparity in mortality doubled from high quality to low quality hospitals.

"Nationwide, women are both more likely to die after heart bypass surgery and more likely to undergo surgery at low quality hospitals," said Catherine M. Wagner, M.D., M.Sc., first author and integrated thoracic surgery resident at University of Michigan Health.

"It is known that women have a higher mortality rate for this procedure. And our findings suggest a major need for improvement at low quality hospitals, as well as more equitable referral of women to high quality hospitals to narrow the gap we are seeing after high risk surgery."

In the study, women more commonly had unplanned admissions ahead of coronary artery bypass grafting, often called CABG, and had a higher burden of comorbid conditions than men. The results echo prior findings that female patients with coronary artery disease are referred later for surgery.

The late presentation to the hospital, researchers suggest, may be due to understudied biological differences between male and female patients.

Additionally, higher quality hospitals that take on a greater volume of CABG cases each year have demonstrated better surgical outcomes for moderate to high risk cases.

"Altogether, there is likely a combination of both patient risk and quality of care provided at each hospital that leads to the differences we are
seeing by sex for these surgical procedures," said co-author Andrew Ibrahim, M.D., M.Sc., associate professor of surgery at U-M Medical School and co-director of the Michigan Medicine Center for Healthcare Outcomes and Policy. 

"In addition to improving the process of referral for female patients to high quality centers, prior work has found that surgeon-patient gender concordance could lead to improved outcomes for female patients. So, policies that aim to increase gender diversity in cardiothoracic surgery—a field that is more than 90% male—could also help to narrow this disparity."

A national study published in March 2023 found that the mortality rate for female patients undergoing CABG increased from 2011 to 2020. One call to action published in *JAMA Surgery* said the findings "should be regarded as an exploding flare in the sky for all clinicians who care for women."

In November 2023, the White House announced its first-ever Initiative on Women's Health to "spur innovation, unleash transformative investment to close research gaps, and improve women's health." The Department of Health and Human Services later announced a $100 million commitment to fund research and development efforts in women's health.

Despite recent improvements in outcomes for patients undergoing heart bypass surgery, Wagner says, there is a gap in outcomes for women that remains.

"Our study shows that improvement in care at low quality hospitals and equitable referral of women to high quality hospitals may narrow these long-standing gaps in care," she said.
"Overall, it's a really exciting time to be doing research in women's cardiovascular health, and I am optimistic that with this renewed focus on studying cardiovascular disease in women, we will achieve equitable outcomes for women undergoing heart surgery and improve care for all of our patients."


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