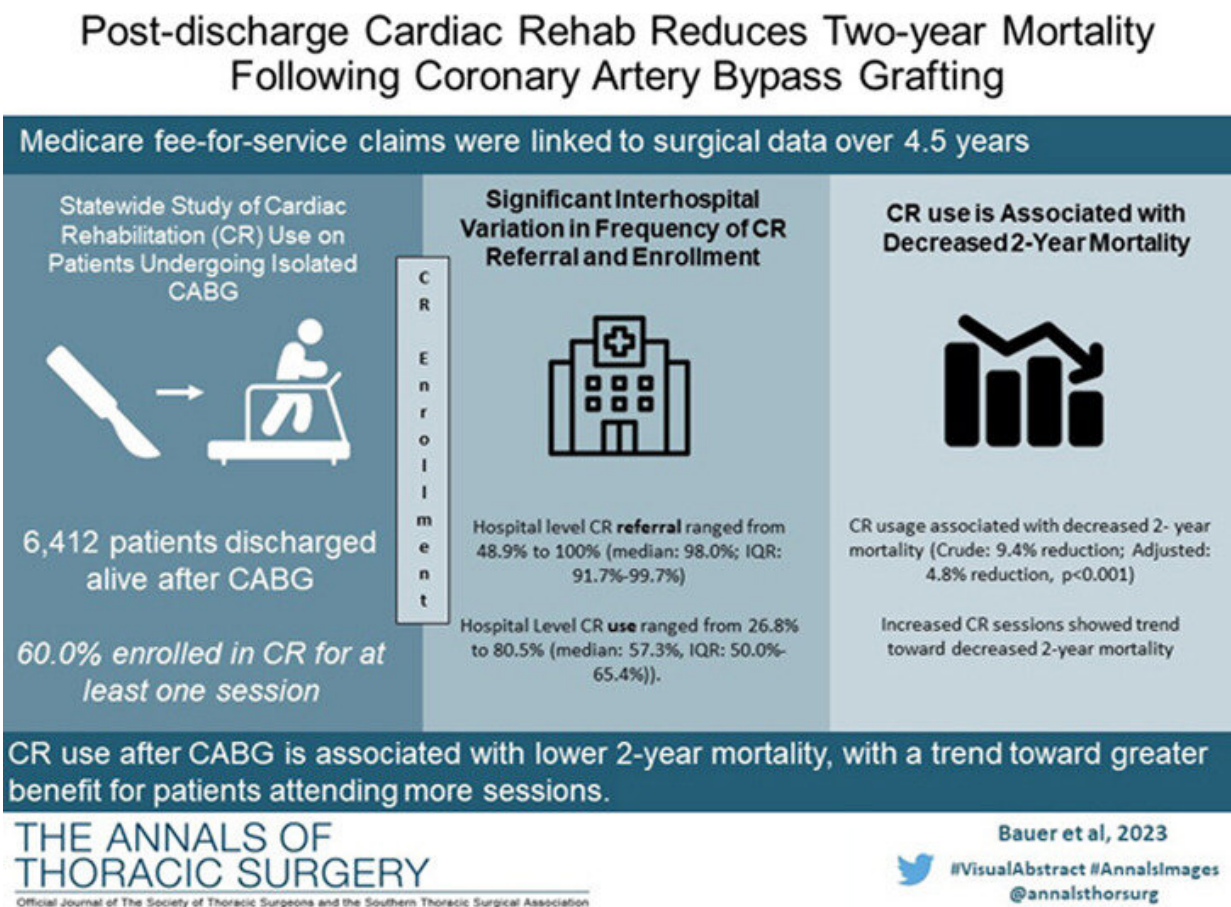


Cardiac rehabilitation reduces risk of death years after heart surgery, still underutilized

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Graphical abstract. Credit: *The Annals of Thoracic Surgery* (2023). DOI: 10.1016/j.athoracsur.2023.05.044

For millions of Americans who have heart surgery or experience

cardiovascular complications, like heart attack or heart failure, they may be encouraged to participate in cardiac rehabilitation. The medically supervised program combines lifestyle changes, education and physical activity to help patients recover and reduce their risk of future problems.

A Michigan Medicine study now finds that people who participate in [cardiac rehabilitation](#) have a decreased risk of death years after surgery, with a trend towards better outcomes in patients who attend more sessions.

"Time and time again, cardiac rehabilitation has been shown to improve outcomes and quality of life for patients undergoing [heart surgery](#), yet we often fall short in getting patients to attend," senior author Michael P. Thompson, Ph.D., assistant professor of cardiac surgery at University of Michigan Medical School.

Researchers explored over 6,400 Medicare fee-for-service claims linked to clinical registry data to assess cardiac rehabilitation use by Michigan residents after [coronary artery bypass grafting](#), a procedure commonly called heart bypass, between 2015 and late 2019. The surgery improves blood flow to the heart by connecting a healthy artery or vein from another part of the body to a portion of the coronary artery that is blocked.

The multicenter study concluded that patients who underwent cardiac rehabilitation after heart bypass surgery had a 3-5% absolute reduced mortality rate in the two years following the procedure. The greatest reduction in mortality was found in patients who completed 36 or more sessions, which is the recommended number for coronary artery bypass grafting patients.

"While attending any cardiac rehabilitation session was better than none at all, our data highlight that patients received a greater benefit when

they attended more sessions," Thompson said. "Focusing on both attendance and adherence to cardiac rehabilitation will benefit patients."

The patients who tended to participate in cardiac rehab after coronary artery bypass grafting were older on average, discharged to their home more often than an extended care facility and spent less time in the hospital.

Just over half of patients attended a single session of cardiac rehabilitation, and only 12% of those patients completed all 36 sessions. This occurred despite [health systems](#) referring patients to the program 94% of the time.

"Our findings suggest that referral alone is not be sufficient to ensure participation, and quality improvement efforts targeted at improving participation are needed," said first author Tyler M. Bauer, M.D., general surgery resident at U-M Health.

"The gap between cardiac rehabilitation referral and actual use needs to be closed in order to give every patient the best chance and living longer and healthier lives."

After accounting for patient risk factors, only 5% of the variation in cardiac rehab use was attributable to the hospital at which a patient had a procedure.

[In a 2022 study](#), Michigan Medicine researchers found that Black patients who underwent stenting or balloon angioplasty for clogged arteries were referred to cardiac rehabilitation at significantly lower rates than white [patients](#). [Women, minorities, older adults and those with additional medical conditions are all under-referred to cardiac rehab](#), according to the Centers for Disease Control and Prevention.

"Minority and underserved populations face many barriers to [cardiac rehab](#), but improving referral, attendance, and adherence in these populations may be an effective strategy to mitigating longstanding disparities in cardiovascular outcomes," Thompson said.

The paper is published in *The Annals of Thoracic Surgery* journal.

More information: Tyler M. Bauer et al, Cardiac Rehabilitation Reduces Two-Year Mortality After Coronary Artery Bypass Grafting, *The Annals of Thoracic Surgery* (2023). [DOI: 10.1016/j.athoracsur.2023.05.044](#)

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