



DEI COMMITTEE



Trevor S. Sutton, MD
*Hartford Hospital and UConn Medical Center
West Hartford, CT*

*Lead author of this featured article.
Member of SCA's DEI committee and leads the research
subcommittee of DEI.*



Editorial by:
Promise Ariyo, MD, MPH
*Johns Hopkins Medicine
Baltimore, MD*

Member of the SCA's DEI committee.

Bridging the Gap in Cardiac Surgical Outcome Among the Races; Is ERAS a Path Forward?

Disparities, specifically racial disparities, in surgical outcomes are an irrefutable problem in the perioperative arena. Unfortunately, cardiac surgery is not immune to this problem and racial differences in mortality and morbidity outcomes have been reported after Coronary Artery Bypass Surgery (CABG)^{1,2}. This unsettling problem is persistent after adjusting for multiple variables including socio-economic status, comorbid conditions, surgeon, hospital, and care factors³. Thankfully, this issue is gaining widespread recognition and there is agreement on the need to rectify this problem and mitigate these disparities.

One of the recent remarkable strides in perioperative care is the advent of Enhanced Recovery after Surgery, (ERAS). The concept of well-thought-out, multi-discipline derived, protocolized ways of caring for surgical patients has been reported to improve outcomes, including mortality, recovery and costs of surgical care⁴. Of particular interest is the signal that it might be successful in reducing racial outcomes disparities in non-cardiac surgery. ERAS is increasingly being utilized for cardiac surgery in many institutions but whether this translates to reduction in racial disparities and outcomes, has not been established⁵.

It is therefore with great interest we present a recent study published by Sutton et al in the Journal for Cardiothoracic and Vascular Anesthesia (JCTVA)⁶. This retrospective study was performed at a single tertiary center with the primary objective of identifying associations between ERAS implementation and outcomes for all patients undergoing isolated CABG surgery. The secondary objective was to elucidate any associations between ERAS and outcome disparities after CABG surgery between a White population and a propensity matched pre-specified Minorities subpopulation.

In their analysis, Sutton et al included all adult patients undergoing isolated CABG surgeries, including elective, urgent and emergent CABG surgeries between January 2016 and December 2020. They compared patients who underwent CABG procedures prior to the ERAS implementation to those whose surgeries occurred after ERAS implementation. These pre and post ERAS groups were subdivided by race and ethnicity into a White

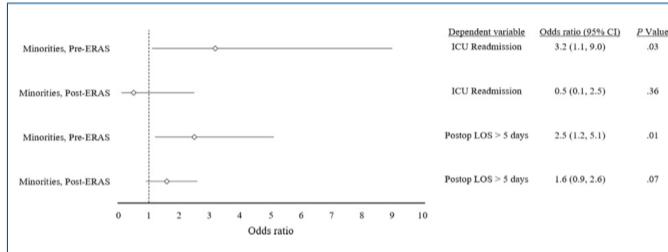
COMMITTEE NEWS



DEI COMMITTEE

subgroup and a Minorities subgroup. The Minorities subgroup was composed of African American, Hispanic Non-White, Asian, Native Hawaiian and/or Pacific Islander and American Indian and/or Native Alaskan patients.

A large population of 1735 patients undergoing elective or urgent CABG surgery were analyzed, of which 584 post-ERAs patients were propensity matched with 584 pre-ERAS patients such that there were non-significant differences between the two cohorts. Consistent with prior studies, there were statistically significant improvement for all patients in ERAS specific outcomes, including shorter length of stay (LOS), total ventilation time, increased likelihood of early extubation and reduced postoperative opiate consumption. There were no differences between the two groups with respect to 30-day mortality. Additionally, logistic regression models demonstrated that disparities in ICU readmission and postoperative LOS between White and Minorities patients were eliminated post-ERAS implementation, a novel discovery in the world of CABG surgery. The authors concluded that ERAS is not only a promising quality initiative for all patients but also potentially serves as tool for health equity initiative.



The odds ratios of ICU readmission and postoperative LOS >5 days for Minorities patients pre-ERAS and post-ERAS. Bars correspond to 95% confidence intervals; p value < 0.05 considered statistically significant. ERAS, Enhanced Recovery After Surgery protocol; ICU, intensive care unit; LOS, length of stay.

From Sutton et al - *Enhanced Recovery After Surgery Is Associated With Improved Outcomes and Reduced Racial and Ethnic Disparities After Isolated Coronary Artery Bypass Surgery: A Retrospective Analysis With Propensity-Score Matching*. *J Cardiothorac Vasc Anesth.* 2022;36(8 Pt A):2418-31.

In recent years, several publications have reported on racial disparities in surgical outcomes. However, investigative work dedicated to studying these differences and workable solutions in a systematic way is lacking. This study by Sutton et al is therefore timely and brings optimism to finding solutions to this important issue. It adds to the growing evidence that ERAS improves outcomes for patients and narrows the racial gaps in outcomes. This effect of ERAS on outcomes for racial minorities has been reported for other types of surgical procedures including colorectal surgery^{7,8}. Since the use of ERAS is becoming more widespread in cardiac surgery, it makes sense to capitalize on all the ways it can improve outcomes in the minority patient population. As the authors point out, there is a lot more work to be done in understanding the exact mechanisms by which ERAS improves outcomes among racial minority groups. It makes intuitive sense that providing care, using robust and vetted standardized pathways throughout the peri-operative period will even the playing field for all patients, regardless of racial or ethnic background. Some scholars have suggested that the standardized pathways

COMMITTEE NEWS



DEI

are successful by modifying decisional behavior and reducing the impact of provider's conscious and unconscious biases.

This study also raises important questions in our minds, however. Are there specific elements of ERAS that are more impactful in equalizing quality of care for racial minorities? And how well are providers adhering to these protocols for all comers? Large prospective and multicenter studies looking at physician preferences and practices may elucidate more important elements of this program and its impact on disparity work. Nevertheless, the authors have given an encouraging food for thought and we look forward to future work as we seek to make advances in making cardiac surgical care equitable for people of all races.

References

1. Becker ER, Rahimi A. Disparities in race/ethnicity and gender in in-hospital mortality rates for coronary artery bypass surgery patients. *J Natl Med Assoc.* 2006;98(11):1729-39.
2. Konety SH, Vaughan Sarrazin MS, Rosenthal GE. Patient and hospital differences underlying racial variation in outcomes after coronary artery bypass graft surgery. *Circulation.* 2005;111(10):1210-6.
3. Mehta RH, Shahian DM, Sheng S, O'Brien SM, Edwards FH, Jacobs JP, et al. Association of Hospital and Physician Characteristics and Care Processes With Racial Disparities in Procedural Outcomes Among Contemporary Patients Undergoing Coronary Artery Bypass Grafting Surgery. *Circulation.* 2016;133(2):124-30.
4. Ljungqvist O, Scott M, Fearon KC. Enhanced Recovery After Surgery: A Review. *JAMA Surg.* 2017;152(3):292-8.
5. Engelman DT, Ben Ali W, Williams JB, Perrault LP, Reddy VS, Arora RC, et al. Guidelines for Perioperative Care in Cardiac Surgery: Enhanced Recovery After Surgery Society Recommendations. *JAMA Surg.* 2019;154(8):755-66.
6. Sutton TS, McKay RG, Mather J, Takata E, Eschert J, Cox M, et al. Enhanced Recovery After Surgery Is Associated With Improved Outcomes and Reduced Racial and Ethnic Disparities After Isolated Coronary Artery Bypass Surgery: A Retrospective Analysis With Propensity-Score Matching. *J Cardiothorac Vasc Anesth.* 2022;36(8 Pt A):2418-31.
7. Wahl TS, Goss LE, Morris MS, Gullick AA, Richman JS, Kennedy GD, et al. Enhanced Recovery After Surgery (ERAS) Eliminates Racial Disparities in Postoperative Length of Stay After Colorectal Surgery. *Ann Surg.* 2018;268(6):1026-35.
8. Felder L, Cao CD, Konys C, Weerasooriya N, Mercier R, Berghella V, et al. Enhanced Recovery after Surgery Protocol to Improve Racial and Ethnic Disparities in Postcesarean Pain Management. *Am J Perinatol.* 2022;39(13):1375-82.

