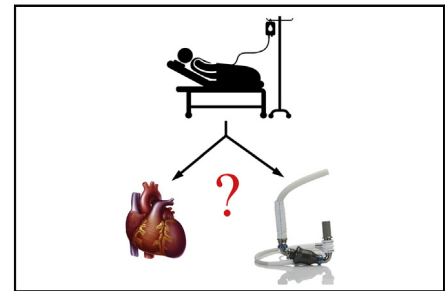


See Article page 123.



Commentary: To transplant or to support with a ventricular assist device? Trying to uncover why differences in rates exist

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The choice to place MCS is influenced by the option of heart transplantation.

CENTRAL MESSAGE

MCS usage is unevenly distributed by race. The cause of this disparity is unknown. Changes in UNOS heart allocation policy may alter MCS usage, and follow-up will show if disparities are exacerbated.

The article in this issue of the *Journal* by Bourque and coauthors¹ is the most granular population-level study to date to look at geographic and racial discrepancies in the use of durable mechanical circulatory support devices (MCSs). Although the mechanisms generating these disparities remain unclear, there is variability in the rates of MCS implantation by United Network for Organ Sharing (UNOS) region and race. In 7 of the 11 regions, the relative rate of growth in MCS usage was greater in minorities than in whites.

Changes in the rate of heart transplantation in each region were seen with time; however, except in region 4, rates of heart transplantation for whites and minorities changed relatively little, as shown in the article's Figures 3 and 4.¹ This is in contrast to durable MCS usage, for which rates increased in all regions and the changes were generally much larger than changes in heart transplantation. The approval of newer generation devices with markedly better outcomes than previous options probably underlies this increase.

It is thought provoking that there is a higher rate of MCS usage in minorities, and a higher relative rate of growth in MCS usage in minorities in most regions. This increase could be from one or several causes: higher incidence of heart failure in minorities²; improved recognition of treatment options and improved access to MCS; greater barriers to access heart transplantation³; and greater bias in offering advanced health care to minorities.⁴

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It is interesting that Bourque and coauthors¹ chose to focus on UNOS regions, given the recent changes in heart allocation policies that remove “region” from the allocation system. In addition, new status levels were added to base allocation more on the severity of patient illness and less on wait list time. The older allocation system indirectly promoted the use of MCS, because long wait times in the most urgent status levels necessitated durable MCS placement in many patients with anticipated long wait times. As the new donor organ allocation policy replaces regional boundaries and allows more discrimination in patient urgency, it will be interesting to see whether MCS usage rates change as a result and whether there are any changes in access to transplantation by race.

Because MCS and transplantation are “competing” therapies, areas with lower organ availability may have higher rates of MCS placement. Although the study of Bourque and coauthors¹ focuses on UNOS regions for better granularity, data on organ availability are not presented, so we are not able to determine whether the regional differences in MCS usage rates are related to donor availability. This could be an area of future study.

More granularity in data will likely allow modern computation-based research methodology, such as machine learning, to examine and analyze data by minority subgroups and by zip code. Such data exist on a vast number of topics,

from financial disparity to climate change,⁵ and they could be leveraged in better understanding the nature of disparities.

Finally, we should not forget existing sex bias when providing advanced heart failure therapies. Women are older and sicker when they undergo coronary artery bypass grafting, and they receive far fewer heart transplants than men,⁶ despite equal incidences of cardiovascular disease and heart failure.

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