

Commentary: Mechanical circulatory support variation in the United States



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Disclosures: National Co-PI MOMENTUM 3 Trial, Abbott Medical.

Received for publication Sept 24, 2019; revisions received Sept 24, 2019; accepted for publication Sept 25, 2019; available ahead of print Oct 4, 2019.

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J Thorac Cardiovasc Surg 2021;161:134

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2019.09.117>



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Central Message

The utilization of mechanical circulatory support varies by geography and race in the United States. The reasons for this variation are unknown.

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“We may have all come on different ships, but we’re in the same boat now.”

—Martin Luther King, Jr.

Access to health care remains of major interest to most Americans. Although our political process currently involves broad policy-based discussions regarding health care access, what actually occurs regarding access to and delivery of important technologies, such as mechanical circulatory support (MCS), in the United States? Furthermore, for very resource-intensive therapy such as MCS and heart transplantation, does the provision of these therapies differ by race and geography throughout the United States?

These questions are addressed in the provocative and eye-opening article by Bourque and colleagues¹ in this month’s *Journal*. These investigators examined the use of mechanical circulatory support in the United States by merging 2 large data registries: INTERMACS and a Medicare database with hospitalizations for heart failure. They then integrated population estimates from a Centers for Disease Control database, the WONDER registry, to understand how population estimates could be used to explore rates of MCS as a function of race and geography. They divided the US population into the 11 United Network for Organ Sharing (UNOS) regions and analyzed the use of MCS devices by these regions and by race.

The central finding in this analysis is that the use of MCS varies substantially by race and geography in the United States. Whereas MCS use grew in both white and nonwhite populations, the rate of MCS implantation was higher in minority populations compared with white populations in 7 of the 11 UNOS regions. The present analysis confirms a previous finding of racially disproportionate use of MCS in the United States.² The present analysis adds new information, with the regional differences in MCS use as a unique

finding. The present analysis also combined the Medicare and INTERMACS registries to refine the estimate of MCS use to improve the likelihood of accurately estimating MCS use in the US.

Unraveling the mechanisms and the basis for these findings will be highly important as the field of MCS evolves. In particular, both the influence of the Affordable Care Act and the greater burden of lower socioeconomic status of minority populations that might limit access to greater specialty care in certain regions of the United States appear to be logical explanations for these findings. Finally, the number of destination ventricular assist device centers in the United States grew during this period, and an overall increase in MCS use may be secondary to the existence of more centers with more MCS implants. The cause of the racial and geographic disparity in MCS use remains unclear, however. A pursuit of the putative disparities in MCS use will prove most important in ensuring that advanced therapies for end-stage heart failure are equally available to all members of our society.

References

1. Bourque JL, Liang Q, Pagani FD, Zhang M, Aaronson KD, Kormos RL, et al; Michigan Congestive Heart Failure Investigators (MiCHF). Durable mechanical circulatory support device use in the United States by geographic region and race. *J Thorac Cardiovasc Surg.* 2021;161:123-33.e13.
2. Breathett K, Allen LA, Helmkamp L, Colborn K, Daugherty SL, Blair IV, et al. Temporal trends in contemporary use of ventricular assist devices by race and ethnicity. *Circ Heart Fail.* 2018;11:e005008.