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Research Letter

# Assessing racial disparities in heart transplant allocations post-2018 policy change

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Heart failure (HF) is a major public health issue in the U.S., currently affecting 6.2 million patients [1]. Heart transplant is recommended for some patients with advanced HF, but prior studies have shown race disparities in access. The 2018 allocation policy update aimed to improve equitable access by implementing objective physiological criteria and revising the geographic distribution of donor hearts to decrease waitlist mortality [2,3]. Our study investigates whether racial inequalities have persisted after the 2018 policy using data from the Organ Procurement and Transplantation Network (OPTN).

We analyzed 2023 OPTN transplant data and the active OPTN waitlist data (March 2024 at the time of analysis) to evaluate the equity of transplantation against the demographics of the waitlist. We computed a relative waitlist-to-transplant ratio for Black patients compared to White patients in 2023, calculated as follows:

$$\frac{\text{Black patients on Waitlist}}{\text{Black patients on Waitlist} + \text{Black patients transplanted in 2023}} \Big/ \frac{\text{White patients on Waitlist}}{\text{White patients on Waitlist} + \text{White patients transplanted in 2023}}$$

A ratio greater than 1 suggests underrepresentation of Black patients in receiving transplants compared to White patients.

We identified 4545 patients who were transplanted in 2023 (70.6 % male, 24.8 % black) and another 3437 who were actively on the waitlist (76.1 % male, 28.2 % black). Nationally, the waitlist-to-transplant ratio for Black compared to White patients was 1.11 (95 % CI: 1.05–1.18; ratios for individual UNOS regions are provided in supplementary figure 1). The most significant disparities were seen in some of the Northeastern regions of the United States; 1.31 (95 % CI: 1.09–1.56) in Region 2 and 1.22 (95 % CI: 1.02–1.47) in Region 9.

Previous studies have established that social and economic factors lead to worse post-cardiac transplant outcomes for Black patients, and contribute to disparities in initial heart transplant listings [2,4]. In line with these findings, our research suggests that Black patients are also disproportionately underrepresented in heart transplant recipients relative to their listing numbers. These disparities were seen before the 2018 allocation policy as well, as White patients were transplanted at a small but significantly higher rate than black patients [5]. Our results suggest that despite changes to the allocation policy in 2018, racial disparities persist. Wealthier patients, often White, can afford to be listed at multiple sites, increasing their transplant chances. Lower donor registration rates among Black Americans also reduce organ match opportunities due to human leukocyte antigen matching [6].

Recent studies indicate unconscious biases affect transplant offers and acceptance rates for Black patients, with an odds ratio of 0.76 for the first offer acceptance compared to White candidates. Another study found that black patients are perceived as sicker, and concerns about trust and adherence affect their likelihood of being offered a transplant [7,8]. Provider education on reducing unconscious biases may help address these disparities. Limitations of this study include lack of data on socioeconomic status, healthcare access, comorbid conditions, and the impact of multiple listings. Our findings suggest that ongoing efforts are needed to eliminate racial disparities and move closer to a more equitable transplant system.

## Disclosure statement

None of the authors have anything to disclose.

## Ethical statement

This manuscript is the authors' original work, which has not been published elsewhere and is not currently being considered for publication elsewhere.

All authors have made substantial contributions to the conception of the study, the acquisition, analysis, and interpretation of data, drafting and revising the manuscript, and have given final approval of the version to be submitted.

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## CRediT authorship contribution statement

**Kabir Malkani:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing. **Ruina Zhang:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing. **Vinay Kini:** Supervision, Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Visualization, Writing – original draft, Writing – review & editing.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ahjo.2024.100446.

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