

Health Care Management Science

Special issue on Analytical Fairness in Health Care

Analytics is transforming every organization, and the health care sector is no exception. With recent advances in machine learning methods and a proliferation of health IT systems, prediction models are increasingly embedded into decision-making processes in hospitals, in outpatient clinics, and for healthcare policy. These models bring the promise of personalized and precision medicine, improved workflow, and cost containment to healthcare delivery. However, they can also lead to disparate impact on different demographics, given that predictive models are trained on data generated through complex socio-economic and behavioral processes. Furthermore, health care training datasets have been historically imbalanced, producing disparities between predicted and observed real-world outcomes and potentially leading to sub-optimal care for many population groups. This calls for reexamining the way we apply and evaluate analytics in health care.

We define analytical fairness as addressing and correcting bias and potential inequities resulting from the use of decision support systems, machine learning tools, and other analytical approaches in the health care setting. The focus of this special issue is, therefore, to examine new approaches that combine operational and fairness perspectives, in addition to revisiting our past methods through the lens of fairness, thereby reimagining the health care analytics of the twenty-first century. Topics of interest include, but are not limited to:

- Innovative approaches to classic OM problems in health care (e.g., scheduling, resource optimization) where health equity is central to the model development.
- A critical review of a classical OM approach or methodology through the lens of fairness and equity with concrete and demonstrated approaches for improvement.
- Translational studies of advances in machine learning fairness to the health care domain.

- Empirical studies that assess evidence of analytical fairness or bias in health care settings.
- Development of metrics for quantifying inequity and/or bias in health care.

Papers can be submitted at any time prior to **June 30th, 2022**, and will be assigned to reviewers and reviewed as they are submitted. To ensure the timely publishing of papers, papers will go through at most two revision cycles. Papers will be published online on acceptance, in advance of planned special issue date in early fall 2023. Authors are permitted to post their papers in open repositories (e.g., ArXiv, Researchgate, SSRN, etc.) during the review process. Manuscripts should conform to the journal's submission guidelines. Submissions should be made through the journal's Editorial Manager site, and authors wishing their paper to be considered for the Special issue should select "Analytical Fairness" as the article type.

The special issue will operate with an expanded editorial team, which is listed below. Authors should indicate in a cover letter the editor whom they think would be best placed to handle their paper.

The guest editors of this special issue are:

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