

Cherry-picking profitable patients: New research identifies unintended consequences for some Medicare patients

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New research in the INFORMS journal *Manufacturing & Service Operations Management* finds that Medicare Advantage (MA), the

largest healthcare capitation program in the U.S., unintentionally incentivizes health plans to cherry-pick profitable patients from traditional Medicare (TM). "Capitation" is the annual fee paid to a healthcare practice by each participant in a health plan.

"Contrary to popular belief, [big data](#) and machine learning alone cannot address this problem. We propose a modified medical loss ratio mechanism to address the risk selection problem in MA," says Turgay Ayer of the Georgia Institute of Technology.

Ayer, alongside co-authors, Zhaowei She of the Singapore Management University and Daniel Montanera of Grand Valley State University, say this observed risk selection in the MA market has historically been attributed to data limitations and low explanatory power of the current risk adjustment design. Because of this, many believe that risk selection would gradually disappear over time with increased availability of big data.

The study, "Can Big Data Cure Risk Selection in Healthcare Capitation Program? A Game Theoretical Analysis," shows that even if the current MA risk adjustment design became informationally perfect through increased availability of big data, incentives would continue to persist for risk selection, primarily because of the way the current risk adjustment model is designed.

"This work addresses a critical design problem in the capitation model, an emerging [healthcare](#) payment model rapidly adopted by payers around the world," says Ayer.

Capitation payment models unintentionally incentivize cross-subsidization behaviors, where healthcare providers conduct risk selection through strategically subsidizing some subgroups of patients using capitation payments collected from other subgroups.

"To address risk-selection problems, payers should modify their current capitation mechanisms to consider the cross-subsidization behaviors in healthcare capitation programs so that less profitable patients aren't treated as second class," says Ayer.

"No generic risk adjustment algorithm can solve the strategic prediction problem in risk adjustment without explicitly taking into account the underlying mechanism in healthcare capitation programs," adds She.

This study calls for practitioners and policymakers to change their views of seeing risk adjustment as a pure statistical and machine learning problem and to look more comprehensively at the human impact.

More information: Zhaowei She et al, Can Big Data Cure Risk Selection in Healthcare Capitation Program? A Game Theoretical Analysis, *Manufacturing & Service Operations Management* (2022). [DOI: 10.1287/msom.2022.1127](https://doi.org/10.1287/msom.2022.1127)

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