

Special Issue on
Computational Decision-Making Tools for Healthcare

CALL FOR PAPERS

The increase in healthcare expenditure is a growing phenomenon. Its causes are related to both uncontrollable factors and process inefficiency. Examples of the former include an increase in demand for medical services and population aging. Examples of the latter are mainly related to medical or clinical processes and to administrative, logistical, and operational activities. In this context, computational decision-making tools can be developed as approaches, methodologies, and techniques capable of supporting decisions regarding: the proper allocation of economic, human, technical, and organizational resources; the improvement of performance and quality of healthcare processes; the increase in patient satisfaction; and the better effectiveness of procedures, drugs and medical devices.

Due to the complex nature of the healthcare sector, such decision-making tools need to be multi-criteria by taking into account many different aspects, from clinical and technical factors to socio-economic and organisational ones. These tools can also support the introduction or implementation of novel technologies or protocols, by assessing and comparing their use and final results/outcomes with clinical standards in terms of clinical efficiency, safety, technical performance, cost-effectiveness, and social impact.

This Special Issue aims to publish original and innovative research related to the implementation of decision-making tools for the whole healthcare sector. Review articles that summarize the state of the art and recent advances in these topics are also welcome.

Potential topics include but are not limited to the following:

- ▶ Multicriteria decision-making methods to evaluate different aspects of healthcare technologies (clinical efficiency, effectiveness, return on sales, technology safety, etc.)
- ▶ The use of Machine Learning and Artificial Intelligence to provide models capable of predicting the outcomes of different clinical processes, useful to doctors for making decisions
- ▶ Combined methodologies useful to decision makers for improving the quality of services
- ▶ Qualitative and quantitative assessment of patients' satisfaction, clinical efficacy, and technical efficiency of technologies, devices, procedures, and protocols
- ▶ Algorithms for the analysis and processing of biomedical data to support decision-making
- ▶ Mathematical models that could provide information on the length of hospital stay, optimizing the hospital's resources, and improving clinical outcomes
- ▶ Simulation models of healthcare processes
- ▶ Tools for Health Technology Assessment and related topics

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.hindawi.com/submit?specialIssue=841472>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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