

Real-time scheduling in outpatient clinics

Citation for published version (APA):

Munavalli, J. R. (2017). *Real-time scheduling in outpatient clinics*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20171101jrm>

Document status and date:

Published: 01/01/2017

DOI:

[10.26481/dis.20171101jrm](https://doi.org/10.26481/dis.20171101jrm)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Valorisation

This section focuses on the usefulness of the results of this thesis to researchers as well as others, such as healthcare professionals, policy makers, industry people and hospital management. This thesis includes several analyses about planning and scheduling that could be useful in minimising patient waiting times and in optimising resource utilisation. The hospital workflow optimisation services focus on capturing the existing workflow of the hospital, and an optimised solution can be simulated by applying the outcome of this study in terms of algorithms and process flows. The goal is to ensure that resources are utilised to the best and outcomes are maximised. This in turn not only leads to highly efficient systems but also reduces costs and brings in affordability.

Societal Relevance

The societal impact of this optimisation could be higher patient satisfaction due to reduced waiting times and cost effectiveness. The hospital management, one of the main stakeholders, is also benefitted for increased throughput. Overall, the society is benefitted by getting more value for the investments made in hospital infrastructure. The pressure on hospitals, due to growing patient demand, need for quality care, and limited capacity could be reduced to a great extent with intelligent planning and scheduling systems.

Business and Innovation

Research and modelling for hospital workflow optimisation have great business potential. A business model can be developed by utilising a percentage of the cost saved in sustaining the business and enabling it to grow profitably with higher volumes. Commercialisation of these models is relevant to stakeholders, as it could guide decision makers about the requirement of resources and they can identify whether to increase or reduce the number of resources. Going forward, as the model is digitised/automated, different/new clinical pathways can be discovered by using latest techniques like Artificial Intelligence and machine learning. This helps to automatically capture the best practices and replicate them in other healthcare systems.

In order to conclude, the studies presented in this thesis could be useful for patients, administrators, managers, decision makers and clinicians. It might be only a small step and there are still barriers to overcome, but this thesis might have contributed in bringing the study outcomes from operations management to various stakeholders.

