

Real-time scheduling in outpatient clinics

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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.

