

Stochastic Hierarchical Approach for Master Surgical Scheduling

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Abstract

Operating rooms and recovery ward beds in a hospital are key components that incur costs in order to improve the lives of patients but also generate significant portions of the revenue. Providing timely care to elective surgery patients in these two components prevents patients' welfares from decreasing and reduces both direct costs to hospitals and indirect costs to other social and health services. A scenario-based hierarchical approach that consists of several mathematical models is proposed in this research to assign surgical teams to operating room blocks by optimizing several objectives. This meets waiting targets set by the government and maximizes the utilization of the operating rooms while also reducing differences between schedules and variations in recovery ward utilization. This approach makes it possible to use these resources more efficiently, which reduces costs and increases the satisfactions of both surgeons and patients.

Keywords

Goal programming, healthcare, scheduling, scenario-based optimization

Biography

Justin Britt is a graduate student at the University of Windsor.

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