



Preference scheduling for nurses under Danish legislation

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Preference scheduling for nurses under Danish legislation

In Denmark, applications of operations research in healthcare planning is scarce. Nurse rostering is no exception and at most hospitals it is conducted manually with no assistance from automated approaches. This project is ongoing research into the possibilities of developing and implementing a nurse rostering system in Danish hospitals where the allocation of resources is optimized using methods from operations research. The system should not only be able to generate rosters which are feasible w.r.t. Danish legal agreements, but also include various preferences in the optimization. Due to the Danish legislation, the problem formulation differs from previous research on nurse rostering.

The project is in its early phases, where the scope and the formulation of the problem are being adjusted in collaboration with a few planners and with focus on their priorities. The problem is a mixture of self-scheduling and preference scheduling, where the nurses request shifts and days off based on three different priority categories. The problem is formulated as a multi-objective MIP model which is used to find a schedule minimizing the violation of preferences, both general preferences from the planners as well as individual requests from nurses. The goal is to make the system flexible to be applied to different wards, and the long-term vision is that the system will be implemented throughout multiple hospitals in Denmark.