Balancing Workload and Care Communication Costs in Nurse Patient Assignment

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Abstract

Nurse-patient assignment is a complex task. Many proposed methods attempt to balance workload across nurses using work-descriptive factors, such as patient acuity, or patient location/distance. However, such methods ignore other factors, such as the cost of care communication. In this initial work, we propose a prototype hybrid method that attempts to blend the use of both types of factors for assignment. We evaluated this hybrid method along with three control methods in a simulated inpatient unit environment. The results showed our hybrid method could obtain benefits of less communication cost with some penalty in acuity imbalance. Future work will focus on refining the method to reduce or avoid this penalty.

Keywords

Communication cost, fair patient assignment, nursing workload, algorithms.