
One transfer per patient suffices: Structural insights about patient-to-room assignment

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Abstract

Assigning patients to rooms is a fundamental task in hospitals and, especially, within wards. For this so-called patient-to-room assignment problem (PRA) many heuristics have been proposed with a large variety of different practical constraints. However, a thorough investigation of the problem's structure itself has been neglected so far. In this paper, we present insights about the basic, underlying combinatorial problem of PRA with a focus on minimizing the number of patient transfers which occur if patients have to change rooms during their stay. Particularly, we prove that in the case of double bedrooms, each patient has to be transferred at most once.

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